**UNITED STATES DISTRICT COURT**
**SOUTHERN DISTRICT OF MISSISSIPPI**
**SOUTHERN DIVISION**

**JIM HOOD, ATTORNEY GENERAL**
**OF THE STATE OF MISSISSIPPI, *ex rel.***
**THE STATE OF MISSISSIPPI** **PLAINTIFF**

**versus** **Civil Action No.:** 1:13cv158 LG-JMR

**BP EXPLORATION & PRODUCTION INC.,**
**BP AMERICA PRODUCTION COMPANY, INC.,**
**BP P.L.C., TRANSOCEAN LTD.,**
**TRANSOCEAN OFFSHORE DEEPWATER DRILLING, INC.,**
**TRANSOCEAN DEEPWATER, INC., TRANSOCEAN**
**HOLDINGS, LLC, TRITON ASSET LEASING GmbH,**
**HALLIBURTON ENERGY SERVICES, INC., SPERRY DRILLING**
**SERVICES, ANADARKO PETROLEUM CORPORATION CO.,**
**AND ANADARKO E&P COMPANY LP** **DEFENDANTS**

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**ORIGINAL COMPLAINT**

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Plaintiff, Jim Hood, in his official capacity as the Attorney General of the State of Mississippi, hereby brings this civil action on behalf of the State of Mississippi against the defendants identified herein, and in support hereof, avers as follows:

## I. INTRODUCTION

1.1 At approximately 9:45 p.m. on April 20, 2010, the Deepwater Horizon semi-submersible drilling rig (referred to herein as the "Deepwater Horizon") sustained an uncontrolled well blowout at the Macondo prospect within Mississippi Canyon Block 252 of the Gulf of Mexico, over forty miles southeast of Venice, Louisiana. The blowout caused the rig to burst into flames, capsize and sink to the bed of the Gulf two days later, and ultimately led to an unprecedented oil spill that damaged, depleted and destroyed marine, estuarine and coastal environments in the State of Mississippi, and caused the State of

Mississippi to sustain losses of tax revenue, economic loss, and other damage, including, but not limited to, damage to its natural resources (the "Oil Spill").

1.2 This civil action is brought by the Attorney General of the State of Mississippi to ensure the State of Mississippi is compensated for the damages and tax losses it has incurred and will continue to incur as a result of the Deepwater Horizon blowout and attendant Oil Spill. The State also seeks recovery of punitive damages sufficient to deter the defendants to this action from engaging in actions and inactions of gross negligence and recklessness such as caused the catastrophe and damages at issue in this lawsuit.

1.3 This court has original subject matter jurisdiction of this suit pursuant to 28 U.S.C. § 1331; personal jurisdiction over all defendants is appropriate in the premises; and, venue is appropriate pursuant to 28 U.S.C. § 1391(b)(2).

## II. PARTIES

### A. Plaintiff

2.1 Jim Hood is the duly elected Attorney General of the State of Mississippi and is empowered as the Chief Legal Officer of the State of Mississippi to bring legal action on behalf of the State and its various agencies, departments and divisions to recover losses sustained by the State. As such, Attorney General Hood is the Plaintiff in this action.

### B. Defendants

***The BP Defendants***

2.2 The following legal entities are collectively referred to as "BP" or the "BP Defendants"; each BP Defendant is subject to the personal jurisdiction of this court; and, all entities collectively referred to as BP are made defendants in this civil action:

a. BP p.l.c. is a British public limited company with its corporate headquarters in London, England. BP p.l.c. is the global parent company of the worldwide business operating under the "BP" logo. Defendants BP Exploration and BP America are wholly-owned subsidiaries of BP p.l.c. and are sufficiently controlled by BP p.l.c. so as to be BP p.l.c.'s agents in Mississippi.

b. BP Exploration & Production Inc. ("BP Exploration") is a Delaware corporation with its principal place of business in Warrenville, Illinois. BP Exploration was a leaseholder and the designated operator in the lease granted by the former Minerals Management Services ("MMS") allowing it to perform oil exploration, drilling, and production-related operations in Mississippi Canyon Block 252. BP Exploration was designated as a "Responsible Party" by the U.S. Coast Guard under the Oil Pollution Act of 1990, 33 U.S.C. § 2714. BP Exploration does business within the State of Mississippi and within this venue.

c. BP America Production Company, Inc. ("BP America") is a Delaware corporation with its principal place of business in Houston, Texas. BP America was a party to a drilling contract with Transocean Ltd. for the drilling of the Macondo well by the Deepwater Horizon. BP America does business within the State of Mississippi and within this venue.

***The Transocean Defendants***

2.3 At the Macondo site, Transocean provided the Deepwater Horizon vessel and the personnel to operate it. Transocean, subject to BP's inspection and approval, was responsible for maintaining well control equipment, such as the blowout preventer and its control systems.

2.4 Transocean also provided operational support for drilling-related activities on board the Deepwater Horizon, as well as onshore supervision and support for those drilling activities at all times relevant to the Oil Spill. The following legal entities are collectively referred to as "Transocean"; each Transocean defendant is subject to the personal jurisdiction of this court; and, all entities collectively referred to as Transocean are defendants in this civil action:

a. Transocean Ltd. ("Transocean Ltd") is a Swiss corporation with offices in Houston, Texas that at all pertinent times was doing business within this venue. Transocean Ltd. was an owner, managing owner, owner *pro hac vice*, and/or operator of the Deepwater Horizon.

b. Transocean Offshore Deepwater Drilling, Inc. ("Transocean Offshore") is a Delaware corporation with its principal place of business in Houston, Texas that at all pertinent times was doing business within this venue. Transocean Offshore is affiliated with Transocean Ltd. and was an owner, managing owner, owner *pro hac vice* and/or operator of the Deepwater Horizon.

c. Transocean Deepwater, Inc. ("Transocean Deepwater") is a Delaware corporation with its principal place of business in Houston, Texas that at all pertinent times was doing business within this venue. Transocean Deepwater is affiliated with Transocean Ltd. and was an owner, managing owner, owner *pro hac vice*, and/or operator of the Deepwater Horizon.

d. Transocean Holdings, LLC ("Transocean Holdings") is a Delaware corporation with its principal place of business in Houston, Texas that at all pertinent times was doing business within this venue. Transocean Holdings is affiliated with Transocean

Ltd. and is a wholly-owned subsidiary of Transocean Offshore. Transocean Holdings is a party to a contract with BP regarding the lease of Deepwater Horizon for drilling operations in the Gulf of Mexico. Transocean Holdings is an owner, managing owner, owner *pro hac vice*, and/or operator of the Deepwater Horizon and participated in the Deepwater Horizon's offshore oil drilling operations at the Macondo prospect. On April 28, 2010, the U.S. Coast Guard named Transocean Holdings as a "Responsible Party" under the Oil Pollution Act of 1990, 33 U.S.C. §§ 2701, *et seq.*, for the discharge of oil into and upon the navigable waters and adjoining shorelines resulting from the explosion aboard the Deepwater Horizon.

e. Triton Asset Leasing GmbH ("Triton") is a Swiss limited liability company with its principal place of business in Zug, Switzerland. Triton is affiliated with Transocean Ltd. and is an owner, managing owner, owner *pro hac vice*, and/or operator of the Deepwater Horizon.

***The Halliburton Defendants***

2.5 The following legal entities are collectively referred to as "Halliburton" and are defendants in this civil action:

a. Halliburton Energy Services, Inc. ("Halliburton") is a Delaware corporation with its principal place of business in Texas. At all pertinent times, Halliburton provided engineering services, materials, testing, mixing and pumping for cementing operations on board the Deepwater Horizon, as well as onshore engineering support for those operations. Halliburton was responsible for the provision of technical advice about the design, modeling, placement and testing of the cement that was used in the Macondo well. Before the blowout, Halliburton was engaged in cementing operations to isolate the

hydrocarbon reservoirs and seal the bottom of the well against the influx of hydrocarbons like gas and oil.

b. Halliburton division Sperry Drilling Services ("Sperry"), f/k/a Sperry Sun Drilling Services, was responsible for mudlogging personnel and equipment on the Deepwater Horizon, including downhole drilling tools. At and before the time of the blowout, Sperry mudlogging personnel were partially responsible for monitoring the well, including mud pit fluid levels, mud flow in and out of the well, mud gas levels, and pressure fluctuations.

***The Anadarko Defendants***

2.6 The following legal entities are collectively referred to as "Anadarko"; each Anadarko defendant is subject to the personal jurisdiction of this court; and, all entities collectively referred to as Anadarko are defendants in this civil action:

a. Anadarko Petroleum Corporation Co. ("Anadarko Petroleum") is a Delaware corporation with its principal place of business in The Woodlands, Texas. At all relevant times, Anadarko Petroleum was a party to the Macondo Prospect Offshore Deepwater Operating Agreement ("Operating Agreement"), and held a 2.5% ownership interest in the lease of the Macondo Prospect site in Mississippi Canyon Block 252 in the Gulf of Mexico.

b. Anadarko E&P Company LP ("Anadarko E&P") is a Delaware limited partnership with its principal place of business in The Woodlands, Texas. At all relevant times, Anadarko E&P was a party to the Operating Agreement, and held a 22.5% ownership interest in the lease of the Macondo Prospect site in Mississippi Canyon Block 252 in the Gulf of Mexico.

## III. FACTUAL ALLEGATIONS

3.1 On April 20, 2010, Defendants' workers on the Deepwater Horizon drilling vessel lost control of a subsea oil well. When highly pressurized hydrocarbons leaked into the well, the vessel's emergency equipment failed to stop the oil and gas from blowing out of the well, which led to explosions and a fire onboard the Deepwater Horizon, and ultimately, the sinking of the vessel and the resulting Oil Spill.

3.2 As described more fully below, the loss of well control was due to the failure of mechanical and cement barriers to seal the well off from the influx of highly pressurized hydrocarbons from the reservoirs surrounding the bottom of the well. The many indications that hydrocarbons were leaking into the well were misinterpreted and/or overlooked and/or disregarded by Deepwater Horizon workers prior to the blowout. Once the hydrocarbons reached the decks of the vessel, fire and gas prevention and alarm systems on the vessel failed to warn the crew and prevent ignition of a fire. The vessel's subsea blowout preventer ("BOP") also failed to seal off the well and stop the flow of hydrocarbons fueling the fire, which exacerbated the disaster.

3.3 After the Deepwater Horizon sank, oil and gas continued to gush out of the damaged well and into the Gulf of Mexico for twelve weeks, polluting the environment, damaging and contaminating real and personal property, and inflicting immense and long-lasting damage upon the environment and economy of the State of Mississippi. Meanwhile, BP downplayed the severity of the Oil Spill, was unprepared for the massive clean-up effort that would later be required and has failed to fulfill its obligation to properly rectify and monitor the damage it has caused.

3.4 The failure to plan, monitor, control, contain, mitigate, and clean up directly resulted from decades-long histories of organizational malfunction and myopia on the part of the Defendants.

**A. The Process of Deepwater Offshore Drilling**

3.5 Upon locating a promising trap of hydrocarbons, drilling vessels such as the Deepwater Horizon are positioned on the sea surface above the proposed well site and begin drilling an "exploratory" well to investigate the viability of the suspected reservoir. Once the suspected reservoir is determined to be a worthwhile source of hydrocarbons, the drilling vessel performs "completion" operations to transform the exploratory well into a "production" well that will extract oil or gas from the reservoir. At this point, wells are sometimes temporarily abandoned – sealed with cement so they are secure against any influx of hydrocarbons from the reservoirs they have penetrated – so they can be reopened by a production vessel at some later date, when the well owner is ready to begin extracting hydrocarbons for production. At the time of the April 20, 2010 blowout, the Deepwater Horizon crew was in the process of preparing the Macondo well for temporary abandonment.

3.6 An exploratory well begins with a wide-diameter "pilot" hole drilled into the seabed, generally to a depth of about 300 to 400 feet. The pilot hole is then "cased," or lined with pipe. "Casing" describes both the actual pipe lining a well, as well as the act of lining the drilled hole – the well bore – with such pipe.

3.7 The first section of casing pipe which is lowered into the pilot hole generally anchors a safety device known as a BOP, which is an appurtenance of the drilling vessel and a part of the vessel's equipment. The BOP is an assembly of hydraulically-operated rams

that can be used to partially or totally seal the well during routine drilling activities or in the event of a well control emergency. If an influx of hydrocarbons enters the well, closure of the BOP rams can prevent a "kick." A kick is a small leak of hydrocarbons into the well, which, if not prevented by the BOP rams, can escalate into a "blowout." A blowout is the uncontrolled release of hydrocarbons from a well into the surrounding environment. A BOP can be activated manually from the drilling vessel, or automatically through an automatic mode function ("AMF"), also known as a "deadman switch," which closes the device's most secure rams if both electrical and hydraulic connections to the drilling vessel are severed. BOP functions can also be activated by using remotely operated vehicles ("ROVs") on the sea floor via the "hot stab" or autoshear functions, which are explained more fully below.

3.8 The risk of a blowout is one of the most dangerous and common risks in deepwater drilling, hence the installation of the BOP so early in the well-drilling process. The reservoirs of hydrocarbons trapped in the rock formations miles beneath the sea floor are highly pressurized, and managing the pressures in a well is a vital and often volatile task during drilling operations. Proper well-monitoring will detect small hydrocarbon influxes early, causing a kick to be contained and the source of the leak repaired before well control is jeopardized. Every worker on a drilling vessel has the authority to call for work on a well to stop if they have a safety concern, including any indication that hydrocarbons are leaking into the well. The BOP serves as a crucial last line of defense for a drilling vessel and its workers when all other attempts to balance well pressure and counter an influx fail and the well begins to flow out of control.

3.9 Once the BOP is properly positioned and secured over the pilot hole, the drilling apparatus and additional casing sections are lowered down through the BOP into the well, while a pipe called a "marine riser" connects the wellhead to the drilling vessel at the surface.

3.10 As the drilling apparatus moves downward and drills out the well bore hole, drilling fluid called "mud" is pumped down the center of the drill pipe. Drilling mud is a thick mixture of barite, water, clay, and chemicals that cools and lubricates the drill bit and suspends and carries rock fragments and other drilling debris to the surface as the mud circulates.

3.11 Drilling mud is carefully formulated so that its hydrostatic pressure[1] slightly exceeds that of the ambient pressure conditions in the various rock formations encountered during the drilling process. The weight of the mud pushes back against the pressure of the hydrocarbons in those formations, helping to control against the ever-present risk of kicks and blowouts in the well.

3.12 As the well bore is drilled deeper and deeper, additional sections of casing are added to line each newly-drilled open-hole section with pipe. Each casing section is secured with a plug of cement. If a well is to be temporarily abandoned before production, then the cementing contractor temporarily seals the well off from the hydrocarbon reservoir it has penetrated via drilling; this isolates the oil and gas to prevent it from leaking into the well. Then, the contractor places a temporary cement plug below the BOP at the top of the well.

[1] Hydrostatic pressure is the pressure exerted by a fluid due to the force of gravity. The denser a fluid, the higher its hydrostatic pressure. Drilling mud is often very dense (12-16 pounds per gallon), so it can counter the highly pressurized hydrocarbons surrounding a well. In comparison, seawater is relatively light, only 8.6 ppg.

3.13 Assuming the design of the well is stable, and proper testing and analysis confirm the integrity of the cement plugs, casing string, and other well components, the drilling vessel can disconnect from the well, temporarily abandoning it until a permanent oil production platform is put into place on the sea surface above the well to begin extracting oil or gas.

**B. The Macondo Lease, and BP's Exploration Plan and Drilling Permit**

3.14 On June 1, 2008, BP acquired a ten-year lease from the Minerals Management Service ("MMS") to search for and exploit hydrocarbon reservoirs at the Macondo prospect site in Mississippi Canyon Block 252, over forty miles off the coast of Louisiana.

3.15 Before BP could begin operations at the Macondo site, federal regulations required BP to submit an Exploration Plan ("EP"), demonstrating that it had planned and prepared to conduct its proposed activities in a manner that was safe, conformed to applicable regulations and sound conservation practices, and would not cause undue or serious harm or damage to human or marine health or the coastal environment. 30 C.F.R. §§ 250.201, 250.202.

3.16 Federal regulations required that the EP be accompanied by "oil and hazardous substance spills information" and "environmental impact analysis information." 30 C.F.R. §§ 250.212, 250.219, 250.227.

3.17 Among the information required to accompany the EP was a "blowout scenario," described as follows:

> A scenario for the potential blowout of the proposed well in your EP that you expect will have the highest volume of liquid hydrocarbons. Include the estimated flow rate, total volume, and maximum duration of the potential blowout. Also, discuss the potential for the well to bridge over, the likelihood for surface intervention to stop the blowout, the

> availability of a rig to drill a relief well, and rig package constraints. Estimate the time it would take to drill a relief well.

C.F.R. § 250.213 (g).

3.18 The oil and hazardous spills information accompanying the EP was required to include an oil spill response plan providing the calculated volume of BP's

> worst case discharge scenario (see 30 C.F.R. 254.26(a)), and a comparison of the appropriate worst case discharge scenario in [its] approved regional [Oil Spill Response Plan] with the worst case discharge scenario that could result from [its] proposed exploration activities; and a description of the worst case discharge scenario that could result from [its] proposed exploration activities (see 30 C.F.R. 254.26(b), (c), (d), and (e)).

30 C.F.R. § 250.219.

3.19 Federal regulations required BP to conduct all of its lease and unit activities according to its approved EP, or suffer civil penalties or the forfeiture or cancellation of its lease. 30 C.F.R. § 250.280.

3.20 In February of 2009, BP filed its fifty-two-page Initial EP for the Macondo prospect site with the MMS. In the Environmental Impact Analysis section, BP repeatedly asserted that it was "unlikely that an accidental surface or subsurface oil spill would occur from the proposed activities." In the unlikely event that a spill did occur, BP predicted a worst case discharge scenario of 162,000 gallons of oil per day and assured the MMS that it was prepared to respond to a spill of that magnitude. BP also claimed the well's distance from the nearest shoreline would preclude any significant adverse impacts from a spill.

3.21 Based on these assurances, the MMS approved BP's Initial EP for the Macondo prospect on April 6, 2009, including the approval of a "categorical exclusion" from the full environmental analysis normally required under the National Environment Policy Act.

3.22 After its EP was approved, BP sought a permit from the MMS authorizing it to drill up to a total depth of 19,650 feet at the Macondo site.

3.23 On or about October 1, 2009, BP E&P, as the Operating Party, and MOEX Offshore 2007, LLC, as a Non-Operating Party, entered into the Macondo Prospect Offshore Deepwater Operating Agreement ("Operating Agreement"). On or about December 17, 2009, BP E&P, MOEX Offshore 2007, LLC, Anadarko Petroleum Corporation Co., and Anadarko E&P Company L.P. executed a "Joinder" of the Operating Agreement. Subsequently, the parties to the Operating Agreement held the following working interest ownership percentages in the lease of the Macondo prospect: BP E&P, 65%; MOEX Offshore, 10%; Anadarko E&P, 22.5%; and Anadarko, 2.5%.

3.24 BP contracted with Transocean Holdings, LLC and its affiliates to provide an oil rig vessel to drill exploratory wells at the Macondo prospect site.

3.25 Once at the site, Transocean provided the Deepwater Horizon and the personnel to operate it. At all times relevant to the Oil Spill, Transocean, subject to BP's inspection and approval, was responsible for maintaining well control equipment, such as the blowout preventer and its control systems. Transocean also provided operational support for drilling-related activities on board the Deepwater Horizon, as well as onshore supervision and support for those drilling activities at all times relevant to the Oil Spill.

**C. The Macondo Prospect Operating Agreement**

3.26 Once the EP and drilling permits for Macondo were approved, BP then entered into the Operating Agreement with Anadarko, Anadarko E&P, and MOEX Offshore.

3.27 The Operating Agreement defined the roles and responsibilities of the three joint leaseholders, including a series of checks and balances regarding health, safety, and

environment issues. The non-operational leaseholders, Anadarko, Anadarko E&P, and MOEX Offshore, were to receive significant information from BP regarding those issues and had the right to demand further information, call for meetings on those subjects, and conduct their own inspections of the Deepwater Horizon.

3.28 As a condition to acquiring their leasehold interests in the Macondo prospect, BP required Anadarko, Anadarko E&P, and MOEX Offshore to execute BP's well plan and Authorizations for Expenditure (AFEs) for Macondo. This put Anadarko, Anadarko E&P, and MOEX Offshore on notice of the following relevant provisions of that well plan: (a) location; (b) the anticipated time necessary to conclude the operation; (c) total depth and target zones; (d) the proposed drilling and completion plans, including the casing program and directional details; (e) details of all coring, logging, and other evaluation operations conducted; (f) information about the drilling rig to be used. The AFEs informed Anadarko, Anadarko E&P, and MOEX Offshore about the financial aspects of the well plan.

3.29 The Operating Agreement also granted Anadarko, Anadarko E&P, and MOEX Offshore the rights to suggest their own proposed well plans for drilling exploratory and appraisal wells within the Macondo prospect, to place their own personnel on key drilling and well development teams, to receive substantial information and data about operations (including Insite real-time well data) on an ongoing basis, to call meetings with BP and other parties regarding any aspect of the Macondo prospect, and the right of unanimous approval of all press releases regarding the prospect.

3.30 Moreover, a November 2009 amendment to the Operating Agreement gave Anadarko, Anadarko E&P, and MOEX Offshore the right to conduct "health, safety, and environmental inspection[s]" with a "right of access to activities and operations" on the rig,

as well as to access BP's files, audits, and statistics on health, safety, and environmental issues.

**D. The Deepwater Horizon's Poor Safety and Maintenance Record**

3.31 The Deepwater Horizon was a dynamically-positioned, semi-submersible deepwater drilling vessel built for Transocean and put into service in February of 2001.

3.32 At all times relevant herein, the Deepwater Horizon was owned by Transocean and leased to BP for drilling exploratory wells at the Macondo prospect site, pursuant to the December 9, 1998, Drilling Contract between Vastar Resources, Inc. and R&B Falcon Drilling Co. for RBS-8D DEEPWATER HORIZON ("Drilling Contract"), and later amendments to that agreement.[2]

3.33 Prior to the Oil Spill, Defendants had actual and/or constructive knowledge that their safety performance during offshore drilling operations was poor. One month prior to the Oil Spill, Transocean commissioned a broad review of the safety culture of its North American operations, including the Deepwater Horizon.

3.34 Also prior to the Oil Spill, Defendants had actual and/or constructive knowledge of significant problems related to the Deepwater Horizon's equipment and maintenance, including problems with the vessel's BOP, electronic alarm systems, ballast systems used to stabilize the vessel in the water, and other significant deficiencies that could "lead to loss of life, serious injury, or environmental damage as a result of inadequate use and/or failure of equipment."

[2] The parties to the 1998 Drilling Contract, Vastar Resources, Inc. and R&B Falcon Drilling Co., are now BP and Transocean entities, respectively. The Deepwater Horizon, formerly known as RBS-8D, was in the process of being built for R&B Falcon Corp. between 1998 and 2001, during which time Transocean purchased R&B Falcon Corp. Upon completion, the Deepwater Horizon was delivered to Transocean. BP America is a successor-in-interest to Vastar Resources, Inc. Amendments to the Drilling Contract were subsequently signed by representatives of Transocean and BP.

**E. Macondo: A Troublesome Well**

3.35 The Macondo prospect site is in the Northern Gulf of Mexico, an area notorious in the industry for high temperature, high pressure, and highly gaseous hydrocarbon reservoirs trapped in weak, brittle rock formations. At the Macondo site, the Deepwater Horizon was conducting drilling operations in excess of 18,000 feet. Defendants knew or should have known that the threat of blowouts increases as drilling depths increase, especially in an area with such troublesome geology as the Northern Gulf of Mexico.

3.36 The Macondo well presented considerable difficulties for the Defendants, even before the catastrophic events of April 20, 2010. At depths of almost 3.5 miles below the sea floor, the pressures within and strengths of the various formation layers that the Deepwater Horizon was drilling through varied widely and changed often, requiring constant adjustments to drilling fluid density and other factors. Deepwater Horizon workers reported that since drilling began on October 7, 2009, they had struggled to control the problematic well, as kicks of natural gas regularly burst into the well and consequently halted the drilling process. BP had been warned by MMS that the gas buildup in this well was a concern and that BP should "exercise caution."

3.37 Because of these problems, the Defendants continued to fall further behind the drilling schedule. Defendants, particularly BP, increased the pressure on the Deepwater Horizon's crew to "bump up" the speed of the drilling effort at Macondo.

3.38 On March 8, 2010, Defendants experienced serious problems, including a hydrocarbon influx into the well and loss of well control. The hydrocarbons leaking into the well went unnoticed for approximately thirty-three minutes, allowing forty barrels of

hydrocarbons to flow into the well before it was shut in to restore well control, fortunately preventing what could have been a lethal blowout.

3.39 The March 8, 2010 influx was caused by damage to the geological formation that the Deepwater Horizon was drilling through, particularly, the brittle rock fractured, swallowing up drilling tools and fluids, in addition to allowing hydrocarbons into the well. A BP analysis of the March 8, 2010 "near miss" concluded that the drilling vessel team's thirty-three-minute response time to the hydrocarbon influx was too slow. A "lessons learned" document was distributed to BP employees, and both BP and Transocean leaders on the Deepwater Horizon were counseled about the handling of the event. Several key individuals who were present during the March 8, 2010 incident were also working on the Deepwater Horizon six weeks later at the time of the April 20, 2010 blowout.

3.40 The formation damage from the March 8, 2010 incident was so severe that a length of drilling pipe became stuck in the open hole of the well bore. Defendants were forced to abandon the lower part of the well bore, plug it with cement, and begin drilling anew in a different direction, causing them to fall several more days behind the drilling schedule and costing $25 million. It also caused BP and the other Defendants to further increase their demands that the drilling vessel's crew increase the speed of operations at a dangerous pace.

**F. Drilling with no Margin for Error**

3.41 The last section of the well was difficult to drill, making it especially important for Defendants to accurately measure and manage the volatile, variable pressures they encountered.

3.42 As a well is drilled, engineers will periodically measure the pore pressure and fracture gradient of the well at different depths. Pressure in a well is managed by adjusting the "mud weight", which is the density of the drilling mud circulated through the well during drilling. To maintain well control during drilling, the pressure in a well must be carefully balanced – too little pressure will allow hydrocarbons from the surrounding formation to leak into the well, but too much pressure will fracture the formation itself, threatening the integrity of the well. The range of appropriate mud weights between those two boundaries is known as the "drilling margin" and it must be continually recalculated and adjusted as drilling progresses through the varying layers of formation.

3.43 Federal regulations require operators to identify the safe drilling margin for a well in the Application for Permit to Drill ("APD") submitted to the MMS, and require operators to submit revised APDs for approval whenever operators encounter unexpected pressures that differ from their original forecasts. *See* 30 C.F.R. § 250.427(b). Further, industry-accepted practice is to keep the mud weight between the "kick margin" (typically .5 ppg below the fracture gradient) and the "swab margin" (typicaly .2 ppg above the pore pressure).

3.44 On March 26, 2010, BP submitted to the MMS the estimated pressures for the last section of the Macondo well, as well as the mud weight it planned to use while drilling that section. The margin was dangerously narrow, but BP continued drilling.

3.45 On April 2, 2010, BP conducted a formation integrity test to measure the fracture gradient of the formation being drilled through. The test gave a fracture gradient reading higher than the fracture gradient BP had estimated for this section and at a significant difference given the already narrow margin. Despite the warnings from this

unexpected result, BP did not retest the fracture gradient, recalculate the drilling margin or mud weight, or notify the MMS. BP continued to drill.

3.46 Continuing drilling proved problematic. BP repeatedly experienced lost returns, as thousands of gallons of drilling mud disappeared into the formation. Eventually even BP was forced to acknowledge that it had no drilling margin at Macondo and had to stop, because the margin had become "a well integrity and safety issue."

3.47 BP's continued drilling without maintenance of a safe drilling margin was reckless and exhibited a gross indifference to well-known potentially disastrous consequences.

**G. Reckless Decision-Making in the Rush to Complete the Well**

3.48 By April 9, 2010, Defendants had finished drilling the last part of the well bore, after which only casing and cementing the final open-hole section remained. In their rush to complete the well, Defendants made reckless decisions about well design, cementing, and well integrity testing that prioritized speed and costs-saving over safety and industry-best practices.

3.49 Pursuant to their Drilling Contract, BP was paying Transocean approximately $500,000 per day to lease the Deepwater Horizon, not including contractors' fees. BP had planned for the drilling work at Macondo to take fifty-one days, at a cost of approximately $96,000,000.

3.50 At the time of the blowout, drilling at Macondo was already months behind schedule, costing BP over $1 million per day in vessel lease and contractor fees and therefore putting them increasingly over budget. This excess cost made the Macondo

project conflict with BP's mandate of a 7% reduction in costs for all of its drilling operations in the Gulf of Mexico.

3.51 Defendants repeatedly violated industry guidelines and government regulations, and ignored warning from their own employees and contractors on the Deepwater Horizon to reduce costs. This emphasis on speed and thrift over safety led to errors and omissions by Defendants which, in turn, caused and/or contributed to the blowout and the subsequent Spill.

3.52 BP has admitted that no one company or individual single-handedly caused this disaster, but rather "a complex and interlinked series of mechanical failures, human judgments, engineering design, operational implementation, and team interfaces" by "multiple companies, work teams, and circumstances" that came together to cause the blowout and the Oil Spill.

**1. Cutting Corners on Well Design**

3.53 For the Macondo well, Defendants chose a vulnerable well design with relatively few barriers against the ever-present risk of hydrocarbon blowouts because the safer option, which had been part of their original well design and was recommended by contractors, would have taken longer to complete and would have increased costs.

3.54 In keeping with Macondo's intractable nature, the last section of the well had been difficult to drill because of the narrow margin between the minimum pressure needed to keep the hydrocarbons in the surrounding reservoirs from leaking into the well, and the maximum pressure the rock formations could take before fracturing and causing damage, delay, or loss of well control. The limited range of safe operating pressures in this last open-

hole section of the well required careful choices to maintain well integrity and safety during the drilling and cementing processes.

3.55 In order to strengthen the well design and provide multiple barriers against blowouts, drilling companies often use a redundant casing design called a "liner/tieback," which provides four barriers against blowouts, while the "long string" casing design chosen by BP only provided two: (1) the cement sealing off the hydrocarbons in the reservoirs from entering the well and, more than 18,000 feet above that, (2) the seal assembly at the top of the well.

3.56 The liner/tieback design is more expensive and takes more time to install. However, it provides four barriers against hydrocarbons leaking into the well and causing blowouts: (1) the cement at the bottom of the well, (2) the hanger that attaches the liner pipe to the existing casing in the well, (3) the cement that secures the tieback pipe on top of the liner, and (4) the seal assembly at the wellhead. Defendants were aware that the long string design was the riskier option. An undated BP "Forward Review Plan" recommended against the long string option because of the risks.

3.57 BP's "Forward Review Plan" identified several arguments against using the long string casing design, including the high risk of a failed cement job, the inability to comply with MMS regulations, and the need to verify the cement job with a cement bond log test and most likely perform remedial cement job(s). BP's "Forward Review Plan" also noted a number of advantages to using the liner/tieback design, including the liner hanger acting as an additional barrier against influxes, a higher chance for a successful cement job on the first try, and the flexibility to postpone a remedial cement job, if it was found that one was required.

3.58 The long string casing design implemented by BP was especially inappropriate for a difficult and kick-prone well like Macondo. BP had originally planned to use the safer liner/tieback design, but rewrote the drilling plan just weeks before the disaster, against the advice of its contractors and its own employees, because the project was behind schedule and over budget.

3.59 Despite the known and documented operational risks and advantages to the respective well design options, one or more of the Defendants chose (or acquiesced to the choice) to install the long string casing instead of the safer liner/tieback design. There is no evidence that there was any motivation behind that decision other than the desire to save time and cut costs on the behind-schedule and over-budget well.

3.60 Defendants also made a risky choice for the casing pipe material itself, using metal well casings that raised concerns from their own engineers. Using the metal casings violated BP's own safety policies and design standards. Nevertheless, the riskier metal casings were used after special permission was granted by BP supervisors.

3.61 A float collar is a component installed near the bottom of the casing string on which cement plugs land during the cementing job. A check-valve assembly fixed within the float collar works like a one-way valve, allowing drilling fluids or cement to be pumped in one direction through the valve, but preventing backflow of the fluids or cement when pumping is stopped, and preventing any influx of hydrocarbons below the float collar from rising farther up the casing. Failure of the Macondo well's float collar would have allowed hydrocarbons to flow up through the casing, towards the riser and the Deepwater Horizon at the surface, contributing to the blowout and the subsequent explosions, fire, sinking, and Spill.

3.62 To properly prevent against backflow of fluids or hydrocarbons into the casing, a float collar must be "converted," or closed after installation. Prior to conversion, an "auto-fill tube" holds the float collar's one-way check valves open so that mud can flow through without having to be pumped through with high force that could damage the formation, which is especially important when working in brittle formations like those at the bottom of the Macondo well. A float collar is converted by partially blocking the bottom of the autofill tube, which pops the autofill tube out of the check valves and therefore allows them to close.

3.63 Defendants installed the Macondo well's float collar after the final casing was installed in the well. When they attempted to convert the float collar, however, there seemed to be some blockage preventing the mud circulation that would have completed the conversion. The drilling vessel crew made nine attempts to re-establish circulation by increasing pressure in the casing, eventually reaching a pressure of 3142 psi, which was six times higher than the normal pressure needed to convert a float collar.

3.64 Later, vessel workers had to use another burst of abnormally high pressure to rupture a "burst disk" in one of the well's wiper plugs. The burst disk did not rupture until 2900 psi was applied, three times the amount of pressure usually required. At the time they occurred, these anomalies should certainly have raised concern in the minds of Defendants' personnel.

**2. Using Too Few Centralizers**

3.65 "Centralizers" ensure that the casing pipe is centered in the well bore; if the pipe is not centered, then the cement placed around it often fails to create a secure seal against the highly-pressurized hydrocarbons surrounding the well. The cement around the

casing is intended to seal the space (the "annulus") between the rock walls of the drilled out well bore hole and the casing that runs through the well bore. If the casing is not centered within the well bore, the pipe can lay near or against the sides of the bore hole, creating too narrow of a space for the cement to set properly, and leaving "channels" of empty space or weak areas in the cement. Those channels and imperfections can allow hydrocarbons to escape out of the formations and into the well, causing a kick or a blowout.

3.66 On or about April 5, 2010, BP notified one or more of the other Defendants that it was planning to use only six centralizers on the final casing section at the Macondo well. Halliburton's analysis concluded that twenty-one centralizers was the recommended number to ensure a secure cement job; using ten would result in a "moderate" gas flow problem and using only six would result in a "severe" gas flow problem, and this information was provided to BP. Additional centralizers were available on the Deepwater Horizon.

3.67 Halliburton, hired for its cementing expertise, was fully aware that the number of centralizers that BP chose to use was unsafe. Yet even after running the models that made it clear that proceeding with only six centralizers would lead to "failure of the cement job," Halliburton neither stopped work nor insisted that BP use additional centralizers; instead, it recklessly proceeded with the cement job it knew was destined to fail.

### 3. Skipping Critical "Bottoms Up" Mud Circulation

3.68 Before beginning the cement job, BP, with Transocean's execution and Halliburton's knowledge, failed to fully circulate the drilling mud through the entire length of the well. This procedure, known as "bottoms up," cleans the well bore and prepares the

annular space for cementing by completely circulating the drilling fluids from the bottom of the well all the way to the surface. A bottoms up circulation also ensures the removal of well cuttings and other debris from the bottom of the well, therefore preventing contamination of the cement, permitting a controlled release of gas pockets that may have entered the mud during the drilling process, and allowing workers on the drilling vessel to test the mud for influxes of gas. Performance of a bottoms up circulation should have revealed the severity of the situation at Macondo before it was too late. Industry guidelines recommend a full bottoms up circulation between installing the casing and beginning a cement job.

3.69 Halliburton's recommendation and best practice was to at least circulate one bottoms up on the well before performing the cement job. Halliburton knew of the risk but did not insist that BP follow safe and recommended practices. BP's own April 15, 2010 operations plan for the Deepwater Horizon called for a full bottoms up procedure to "circulate at least one (1) casing and drill pipe capacity, if hole conditions allow."

3.70 Because a full bottoms up circulation would have taken up to twelve hours on the deep Macondo well, and against industry guidelines, Halliburton's recommendations, and its own operations plan, BP chose to save time and money at the expense of safety by circulating only a small fraction of the drilling mud before beginning cementing, putting the cement job at further risk. Notwithstanding all of Defendants' risky choices and skipped safety precautions up to this point, and despite knowing the risks of using insufficient centralizers and skipping the bottoms up circulation, Halliburton began the cementing job on the Macondo well.

**4. Cementing: The Incorrect Cement Mixture and a Failed Seal**

3.71 Creating solid cement seals on a well is delicate, precise work, and among the most critical tasks to ensure the integrity and safety of the well. Defendants knew or should have known that poor cementing increases the risk of a blowout.

3.72 Prior to beginning cementing operations on the last section of the Macondo well, Halliburton had to make decisions about the type, volume, placement, and pumping of the cement, while taking into account the narrow range of safe operating pressures at the bottom of the well and the gaseous nature of the hydrocarbon reservoirs surrounding the well. Halliburton also knew that BP had not properly prepared the annulus for the cement job by performing a bottoms up circulation, and that BP was not planning to use the recommended number of centralizers on the casing pipe.

3.73 This cement job was intended to fill the annulus between the casing and the well bore and seal off the hydrocarbon-filled formations, as well as plug the bottom of the casing pipe to prevent an influx. The composition of the cement mixture ("slurry") that Halliburton chose for the task would have to allow the cement to be effectively placed and fully set within the narrow range of safe operating pressures at the bottom of the well. During placement, the slurry would have to be light enough to avoid fracturing the brittle formations surrounding the well; however, once set, the slurry would have to be strong enough to resist the intense, nearly 12,000 psi pressure of the hydrocarbon reservoirs within those formations, securely sealing the annular space between the casing and surrounding formations and isolating the hydrocarbon reservoirs from the well. Despite these challenges, Defendants, including BP and Halliburton, improperly designed the cement slurry and failed to thoroughly conduct and/or review the results of laboratory

testing of the cement slurry stability under conditions that would be found in the Macondo well.

3.74 Halliburton ultimately recommended a foamed cement mixture to seal the bottom of the Macondo well. Foam cement is cement that has been injected with nitrogen gas to lower its density. But high temperatures and pressures in wells like Macondo can have unpredictable effects on the nitrogen in the cement, leading to instability and weakness that prevents the cement from forming a secure seal in the well.

3.75 Halliburton and BP already knew the Macondo well was located in brittle, variable, challenging rock formations laced with volatile high temperature, high pressure, and highly gaseous hydrocarbon reservoirs that had plagued drilling operations in the past.

3.76 Prior to using its slurry mixture in the Macondo well, Halliburton conducted at least four foam stability tests on it, or on similar formulations, but the tests were incomplete and substandard, and mostly indicated that the slurry would not be stable in the Macondo well.

3.77 In February of 2010, Halliburton conducted the first two tests on a cement slurry that was slightly different than that ultimately used; both tests indicated that this foam slurry design was unstable if used in Macondo conditions.

3.78 Halliburton conducted two other foam stability tests in April of 2010, this time using the actual slurry mixture and design ultimately used in the Macondo well. On April 13, 2010, seven days before the blowout, testing indicated that the foam slurry design was unstable. Internal reports revealed that the results of this test were reported internally within Halliburton by April 17, 2010. In a second April test, Halliburton modified the testing procedure and the data indicated, for the first time, that the foam slurry mixture

would be stable if used at Macondo. BP received the results shortly before it allowed Halliburton to begin cementing.

3.79 Despite the four tests that Halliburton ran on the slurry mixture, the testing was not comprehensive, thorough, or consistent with industry standards. Halliburton did not provide results for such commonly tested cement slurry parameters as fluid loss, free water, foam/spacer/mud compatibility, static gel strength transition time, zero gel time, or settlement.

3.80 The Halliburton documents indicated that:

a) Only one of the four tests that Halliburton ran on the various slurry designs for the final cement job at the Macondo well indicated that the slurry design would be stable;

b) Halliburton may not have had – and BP did not have – the results of that test showing stable results before the evening of April 20, meaning that the cement job was pumped without any lab results indicating that the foam cement slurry would be stable;

c) Halliburton and BP both had results in March, showing that a very similar foam slurry design to the one actually pumped at the Macondo well would be unstable, but neither acted upon that data; and

d) Halliburton (and perhaps BP) should have considered redesigning the foam slurry before pumping it at the Macondo well.

3.81 In addition to having seen slurry test results showing the instability of Halliburton's proposed cement mixture, BP was also aware of the incomplete, substandard nature of Halliburton's tests, which failed to provide results for several commonly tested parameters. Nevertheless, BP did not insist that Halliburton reformulate its cement slurry or perform the missing standard tests before proceeding with this tricky and important final cement job. In its rush to complete the well, BP moved forward having only seen

Halliburton's first three slurry test reports, all of which indicated that the cement would be unstable in the well.

3.82 Unstable foam cement slurry can result in a nitrogen breakout, which occurs when bubbles of nitrogen create tiny holes in the cement as it is setting, leaving the cement porous and unable to form a seal against the hydrocarbon pressure. A nitrogen breakout not only jeopardizes the foam cement itself, but can also contaminate the other types of cement that it is pumped with, interfering with its proper placement and/or degrading its ability to form a secure seal. A nitrogen breakout in the unstable foam slurry used at Macondo could have weakened the denser, non-foamed cement used to plug the very bottom of the last casing pipe, leaving it also unable to withstand the pressure of the hydrocarbons surrounding the well.

3.83 In addition to the formulation of the cement mixture, the volume of cement used is another factor in ensuring a successful cement job. Halliburton used a small volume of cement for this last section of the Macondo well. This created a high potential for failure of the cement job at Macondo, where the high gas-to-oil ratio in the hydrocarbon reservoirs surrounding the well presented a risk of gas contaminating the cement during the setting process.

3.84 Given the extremely narrow range of safe operating pressures that Defendants were faced with in this last section of the well, it was all the more important to monitor well flow during the cementing process to ensure there were no indications of fluid loss or fracturing of the formations around the bottom of the well. "Full returns," which are considered to yield an equal barrel of drilling fluid out of the well for every barrel of cement pumped in, indicate that the cement is displacing mud from the annulus,

as planned. Monitoring the well for full returns is critical; when less mud flows out of a well than the amount of cement that is being pumped into the well, it indicates fluid is being lost, most likely into fractures in the brittle formations.

3.85 During cementing operations, there was no monitoring system in place that could have confirmed full returns. However, data indicated that about eighty more barrels of cement were pumped into the well than barrels of mud that flowed out. This fluid loss would indicate that the brittle formations at the bottom of the well had fractured during the cementing process, allowing fluids and cement to escape into the fissures in the rock, and ruining the cement job. Nevertheless, BP should have had systems in place to monitor losses of cement, and any losses due to nitrogen compression should have been anticipated and compensated for when interpreting the flow-monitoring data.

### 5. Despite Red Flags, Defendants Skip Crucial Bond Test of Cement Integrity

3.86 After having made risky choices on well design, casing choice, the number of centralizers, skipping the bottoms up circulation, and using an unstable cement slurry, all of which sharply increased the risk that the cement job would fail, BP then made the unfathomable decision to cancel the cement "bond log" test. A "bond log" test would have checked the integrity of the completed cement job by using an imaging tool to gauge the thickness of the cement and determine if it was properly bonded to the casing and the rock formations surrounding the well.

3.87 This decision was contrary to BP's own original drilling plan, which included the cement bond log test. Skipping this test was contrary to BP's own internal standards, which do not consider full fluid returns as a "proven cement evaluation technique," and furthermore require a cement bond log test if a well's cement design provides for less than

1000 feet of cement above the highest hydrocarbon layer. BP's Macondo plan only provided for 500 feet.

3.88 Despite its own drilling plan, internal standards, simulations predicting cement failure, and warnings from its contractors and employees regarding the risk of cement failure due to well design and insufficient centralizers, BP again rewrote its drilling plan haphazardly, cancelling the cement bond log test and refusing to allow Schlumberger Ltd., who had arrived on the drilling vessel specifically and solely to perform the test, from performing the test. BP had no reasonable basis for skipping this absolutely critical and required test other than reduction of costs and saving time.

3.89 Moreover, skipping the test was a violation of MMS regulations, which require that a cement bond log test be conducted if there are indications of an inadequate cement job. 30 C.F.R. § 250.428. Nevertheless, onboard the Deepwater Horizon, neither Halliburton nor any of the other Defendants called to stop work or otherwise insisted that BP run the cement bond log test before proceeding.

### 6. The Casing Hanger Lockdown Sleeve: Another Skipped Safety Precaution

3.90 As discussed above, the riskier long string well design that Defendants chose for Macondo meant that there were only two barriers to a hydrocarbon blowout: (1) Halliburton's cement job isolating the hydrocarbon reservoirs from the well and (2) the seal assembly at the wellhead on the sea floor. Because of the insufficient number of centralizers, the failure to run a bottoms up mud circulation prior to cementing, and the results of Halliburton's and BP's own simulations, the risk of a failed cement job at Macondo was high, making the strength and integrity of the seal assembly at the wellhead, the second and final barrier against a blowout, paramount. Yet again, BP did not deploy the

"casing hanger lockdown sleeve" that would have prevented the wellhead seal from being broken by pressure from below, as it likely was on April 20, 2010.

3.91 A casing hanger lockdown sleeve ties down the seal assembly at the top of a well, providing an extra layer of protection against a blowout. During drilling, heavy mud counters the pressure from the hydrocarbons around the well, preventing their influx into the annulus and the casing. Once the well is properly sealed, with the cement isolating the pressurized hydrocarbons from the well, the heavy mud is pumped out and replaced by less dense seawater. Usually, the casing hanger lockdown sleeve is deployed before the heavy drilling mud is pumped out of the well, so that it can offer an extra shield against any problems during and after the mud displacement process. Contrary to industry standard, BP's plan was to deploy the casing hanger lockdown sleeve *after* the heavy mud had been displaced with seawater.

**H. Premature and Nonstandard Mud Displacement Begins**

3.92 BP and the other Defendants did not wait the seventy-two hours required for the cement job to fully set before pressing forward with the mud displacement. Without the heavy drilling mud to counter the reservoir pressure, any hydrocarbon influx into the well could turn dangerous very quickly, with only comparatively light seawater blocking the path up through the well and the riser to the surface. Given the danger of hydrocarbons springing through a faulty, unset cement job, Halliburton should not have permitted BP to begin mud displacement unless it was certain that its cement job had successfully isolated the hydrocarbon reservoirs and sealed the well. However, Halliburton never protested BP's premature mud displacement.

3.93 Transocean officials initially protested BP's displacement plan. The most well-publicized of these protestations occurred at a preshift meeting on April 20, 2010, when a BP company man challenged the authority of Transocean's OIM.

3.94 The preshift meeting is the standard "pre-tour" meeting held twice a day, at 11:00 a.m. and 11:00 p.m., before the start of each twelve-hour shift at noon and midnight. At most pre-tours, the lines of authority are clear: the BP company man tells the OIM and the driller what he wants accomplished, and the driller tells the various crews how they're going to accomplish it. At the 11:00 a.m. meeting on April 20, however, the BP company man told the drilling team how to displace the mud from the well and replace it with seawater.

3.95 This procedure ran counter to the procedures the drilling team had in place. The driller protested the instructions, suggesting that the proposed procedure was reckless and premature. Despite the protest and the putative nature of the relationship between Transocean and BP the driller was ordered to proceed.

3.96 While BP leased the Deepwater Horizon, Transocean owned the rig and employed the workers gathered at the pre-shift meeting. The OIM was the ultimate authority on the rig and had the power to override the decision of the BP company man in favor of the safety of Transocean workers and the security of the vessel and the well. Despite this authority, the OIM followed the BP company man's instructions.

3.97 The OIM's decision to follow the order of the BP company man was negligent, reckless and a proximate cause of the injury and damage sustained by the State.

3.98 On the morning of April 20, 2010, the day of the blowout, BP informed the drilling fluid specialist that the heavy mud displacement would be almost twenty-eight

times more substantial than usual. The drilling fluid specialist calculated a mud displacement plan according to BP's specifications, including the suspension of the displacement procedure partway through to allow for pressure testing of Halliburton's recently completed cement job. The drilling fluid specialist distributed copies of his mud displacement plan to BP, Transocean, and M-I employees on the drilling vessel; thus, some, if not all, of the Defendants were aware of and complicit in BP's plan to displace an unusually large amount of mud from the well, without the added safety of the casing hanger lockdown sleeve, and beginning before the cement had fully set or been pressure tested.

**I. The Well Fails Key Pressure Tests, Yet Defendants Press On**

3.99 Two types of pressure tests are used to confirm the integrity of a well. The integrity of the casing pipes and assembly is assessed with a "positive pressure" test, which involves increasing pressure in the casing string and observing the pressure response. If the increase in pressure bleeds off, it indicates a problem with the pressure integrity of the casing: the pumped-in pressure is escaping through a leak somewhere along the line. However, if the increased pressure stays constant, it does not necessarily mean the casing assembly is secure. A negative result (where the pressure leaks off) is useful because it is diagnostic of a leaky casing string. A positive result (where the pressure remains constant), is not diagnostic of a secure casing string or a leaky casing string, and is not definitive of the integrity of a well's casing and pipe assembly.

3.100 On April 20, 2010, the Macondo well had a positive result to its positive pressure test, which neither confirmed nor denied the integrity of its casing string.

3.101 At around noon on April 20, 2010, after the completion of the positive pressure test, drilling vessel workers began the mud displacement process. Pursuant to the drilling fluid specialist's mud displacement plan, the displacement would proceed until the spacer fluid had been pumped down to a level twelve feet above the BOP, after which the displacement would be suspended for the negative pressure test.

3.102 The BOP's annular preventer was closed to seal the casing for the negative test, but did not form a secure seal, which allowed about fifty barrels of spacer fluid to leak through the BOP and into the well. This allowed the inlets leading to several small-bore pipes to be used for the negative pressure test to be filled with dense, viscous spacer fluid rather than the plain seawater that should have filled the pipe inlets. Defendants were aware of this spacer fluid leakage and the potential for the viscous fluid to be blocking the small-bore pipes necessary for the negative pressure test, but took no steps to remedy the situation.

3.103 The negative pressure tests were intended to assess the security of Halliburton's cement job at the bottom of the Macondo well. With the casing string sealed, pressure was bled off from inside the well, "underbalancing" it by reducing the pressure in the casing until the external pressure from the hydrocarbon reservoirs surrounding the well was greater than the internal pressure within the casing, itself. Had Halliburton's cement job securely sealed the hydrocarbon reservoirs from the well, there would be little to no fluid flow out of the well and the pressure in the casing would remain at the reduced, underbalanced level. An increase in pressure or flow indicated that the cement job was not secure, and was allowing hydrocarbons to flow into the well and re-pressurize the casing string.

3.104 Defendants' two negative pressure tests on the Macondo well both yielded abnormal results. In one instance, over four times the expected fluid returns spurted out of the well after the pressure was reduced to an underbalanced state. In the other test, the pressure in the well *increased* from 50 psi to 1400 psi – a highly diagnostic "red flag" result, indicating that Halliburton's cement job had failed to seal off the well from the surrounding hydrocarbon reservoirs. The 1400 psi pressure response and the excess fluid returns were indications that hydrocarbons were flowing into the well and re-pressurizing it after it had been underbalanced for the negative pressure test.

3.105 It is also possible that the pressure tests themselves further damaged and weakened the cement in the well. Not only were the tests performed before the cement had adequate time to completely set (BP waited only 12 hours), but, contrary to common practice, the drill string was 10,000 feet above the bottom of the well during the tests.

3.106 BP's failure to conduct an accurate pressure integrity test violated 30 C.F.R. § 250.427.

3.107 Halliburton was also grossly negligent in ignoring the pressure test results and not insisting that a remedial cement job be performed immediately to correct the imperfections in the cement. Because of its experience and expertise with cementing wells, Halliburton was aware of the environmental and safety risks of a failed cement job. Nevertheless, it did not insist that the appropriate action be taken to correct the Macondo well's cement seal.

3.108 The only appropriate response to the abnormal negative pressure test results was remedial cement work to correct Halliburton's obviously flawed cement job and shore up the seal against the highly-pressurized hydrocarbon reservoirs. Defendants, however,

elected to ignore the risks from the results of the only cement integrity tests they had bothered to perform, and continue with their well completion.

### J. Unorthodox Spacer Fluid Mixture and Volume Potentially Interfered with Pressure Tests and BOP Functionality

3.109 During the mud displacement process, BP used an unconventional fluid mixture, and an unusually large volume of it, as "spacer" fluid. This novel composition and amount of fluid may have interfered with the negative pressure test results and/or caused damage or clogging in the BOP.

3.110 In oil wells, a "spacer" is a fluid used to create a division between two other fluids, with the spacer fluid physically preventing the two other fluids from coming into contact and mixing with or contaminating one another. In the mud displacement process at Macondo, the spacer was intended to separate the synthetic drilling mud from the seawater displacing it.

3.111 Spacer fluid is usually water-based mud, however, an uncommon mixture of fluids was used as a spacer during the Macondo well's mud displacement process. Instead of mixing a batch of the usual water-based mud spacer fluid, two "pills"[3] of lost circulation material ("LCM") that had been previously prepared for use in the event of any fluid loss during the cement job were combined. Unlike the water-based mud typically used as spacer, an LCM pill is highly viscous fluid that coagulates to create an extremely thick, stringy mass intended to fill the lost circulation zone, clogging fractures in the rock so that other drilling fluids can no longer escape into the formation. BP and Transocean employees

[3] A "pill" is any small (<200 barrels) quantity of fluid particularly formulated for a specific task that regular drilling fluid cannot perform, such as prevention of circulation flood loss.

on the Deepwater Horizon were all aware of the unorthodox LCM-based spacer and either approved the use or allowed it to occur without comment.

3.112 In addition to the atypical composition of spacer that Defendants used in the Macondo well, the volume of the fluid used was also nonstandard. A normal spacer is approximately 200 barrels of fluid. However, in the Macondo well, the two LCM pills that were used as spacer had a combined volume of over twice that amount.

3.113 Upon information and belief, Defendants used this aberrant fluid composition and volume as spacer in the Macondo well solely to skirt environmental regulations that would have required more costly and time-consuming hazardous waste disposal procedures for the two unused LCM pills.

3.114 As already noted, the LCM used as a spacer leaked past the annular preventer, through the BOP, and into the well before the negative pressure test was run. Defendants' unusual use of LCM as spacer fluid could have confounded the negative pressure test results by blocking the small-bore pipes used for the tests, and could have negatively affected the functionality and effectiveness of the BOP, itself.

### K. Defendants Ignore and Overlook Warning Signs of the Imminent Blowout

3.115 Constantly monitoring a well for signs of hydrocarbon influx is vital for well safety and is common practice in the industry for employees of several companies on a drilling vessel, including the mud-logging company, the drilling contractor, and the lease operator.

3.116 Because of the litany of flippant, short-cutting operational decisions that Defendants made to save time and money while completing the Macondo well, they should have been especially alert to any signs of trouble from the historically intractable well.

Instead of the requisite vigilance, Defendants turned to complacency in the haste to wrap up operations at Macondo, failing to properly monitor the well and ignoring and/or missing an increasingly ominous series of warnings exhibited by the well in the hours before the fatal blowout.

3.117 Pressure and flow data from the well in the two hours before the blowout should have put Defendants on notice that there was a problem and that hydrocarbons were leaking into the well. Real-time data available on the drilling vessel on April 20, 2010, showed that the first indications of hydrocarbons flowing into the well started at 8:52 p.m. and went unnoticed by Defendants. By 9:08 p.m., approximately thirty-nine barrels of hydrocarbons had leaked into the well, but Defendants still had not noticed the pressure and flow indications of the influx. It was not until 9:41 p.m., only four minutes before the blowout, that Defendants finally noticed that the well was rapidly filling with hydrocarbons and that immediate well-control action was needed.

3.118 At 8:52 p.m., the pumps displacing the heavy mud with seawater were slowed, but instead of flow out of the well decreasing accordingly, as it should have, flow increased, which was a clear sign indicating that hydrocarbon pressure from the reservoir below was pushing the mud out of the well faster than the seawater (which was supposed to be displacing the mud) was being pumped in. Defendants completely ignored this warning and carried on with the mud displacement process.

3.119 From 9:08 p.m. to 9:30 p.m. on the night of the blowout, when the mud displacement pump was either running at constant flow or was shut off, pressure in the well steadily increased. At this point, hydrocarbons were flowing into the well at approximately nine barrels per minute. This pressure data should have led Defendants to

begin operations to kill the well and restore control over the pressure; instead, the increasing pressure was ignored or overlooked.

3.120 Throughout the evening of April 20, 2010, the actions of the Deepwater Horizon workers were not consistent with a crew that was suspicious of any problems in the Macondo well. When contacted by a superior at 9:21 p.m., the tool pusher reported that the negative pressure test result had been "good" and that the mud displacement process was "going fine," neglecting to mention the increased flow out of the well or the increasing well pressure.

3.121 The mud displacement pumps were shut down completely at around 9:30 p.m., at which point hydrocarbons had been continuously flowing into the well for thirty-eight minutes. By that time, approximately 300 barrels of hydrocarbons had flowed into the well. A few minutes later, at 9:38 p.m., the steadily increasing level of hydrocarbons passed through the wide-open BOP and into the riser.

3.122 Although there may have been some discussion of "differential pressure" in the well once the mud displacement pumps were turned off, there is no other evidence that Defendants noticed or properly interpreted the many warning signs of the imminent blowout until drilling mud began to spill out of the riser onto the vessel deck at 9:41 p.m., just four minutes before the blowout.

3.123 BP's chain of command for Macondo operations included five employees with less than five months in their respective positions. BP's well site leader was experienced mostly in land-based drilling and was working on the Deepwater Horizon to gain deepwater drilling experience. Furthermore, turnover of Transocean employees on the

drilling vessel had been high, including the replacement of experienced drillers with new hires.

3.124 A safety review by Transocean prior to the Oil Spill found that a lack of hands-on experience for Transocean workers and managers contributed to safety concerns, as many workers had been too readily promoted without sufficient on-the-job experience to fully appreciate the risks.

3.125 As hydrocarbons were steadily filling the well and mounting towards the riser, vessel workers' attention was split between mud displacement and other simultaneous tasks like a "sheen test" (which required a change in flow line configuration, depriving workers of data from one of the two flow meters that had been measuring flow from the well until that point), preparations for the upcoming cement plug insertion, the investigation of a problem that had arisen with one of the mud pumps, and the presence of BP and Transocean executives, ironically onboard to celebrate the Deepwater Horizon's safety record.

3.126 Several of these simultaneously occurring activities impaired vessel workers' ability to monitor pit fluid levels, effectively eliminating that important source of well flow monitoring information.[4] A few hours after the mud displacement process began at noon, Defendants began a four-hour offload of mud to the nearby supply vessel, M/V Damon Bankston. In addition, some of the mud pits and the trip tanks were being cleaned and emptied during the course of the afternoon. These activities all affected the pit fluid levels,

[4] Pit fluid levels provide well information by indicating the volume of fluids at the surface. If the volume of fluid pumped into the well equals the volume of fluid returned from the well, pit levels will remain constant. If there is a hydrocarbon influx flowing into the well, the volume of fluid from the well will be larger than the amount pumped into the well.

compromising their usefulness as indications of well flow. Performance of these activities during the mud displacement process were necessary.

3.127 Even if there had been a compelling reason to perform the mud offload and pit cleaning activities simultaneously with the mud displacement process, Defendants could have preserved the useful monitoring function of pit fluid level information by isolating one or more of the pits for well flow monitoring. At the very least, Defendants could have begun monitoring pit fluid levels again at 5:17 p.m., once the mud offload task was complete, but there is no evidence that pit fluid levels were ever monitored again that afternoon or evening.

3.128 The multiple distractions and interference with well data caused by the drilling vessel crew's multitasking left them unable to detect, analyze, and effectively react to the developing blowout.

**L. Attempts at Well Control: Too Little, Too Late**

3.129 While the Deepwater Horizon's crew was distractedly working miles above, highly-pressurized hydrocarbons leaked through Halliburton's faulty, channeled cement and into the casing string of the Macondo well through the bottom of the last section of casing pipe, flowing up the casing string, and through the BOP and riser to the surface.

3.130 Because of their inattention to proper well monitoring during the mud displacement process, the first sign of the hydrocarbon influx that Defendants noticed was the mud that began spilling out of the riser and onto the vessel deck at about 9:41 p.m., forty-nine minutes after the leak had started at the bottom of the well.

3.131 Defendants' policies and instructions regarding well control procedures for emergencies such as this for their vessel workers were woefully inadequate. The

procedures only contemplated relatively small influxes into the well, and did not provide guidance on what to do if the initial procedures failed to stop the influx, or whether and when to activate emergency BOP functions, such as the emergency disconnect system.

3.132 In response to the mud spurting out of the riser at 9:41 p.m., the drilling vessel crew diverted flow from the well into the mud-gas separator, a device used to separate gas out of the drilling fluid and vent it safely into the air. This diversion would have been the correct protocol if this incident had been a mere kick. However, for a blowout caused by hundreds of barrels of hydrocarbons blasting out of the well, the decision to divert well flow through the mud-gas separator only exacerbated the disaster.

3.133 Diversion to the mud-gas separator not only contributed to the explosions on the Deepwater Horizon, but likely caused the explosions to occur sooner than if the well flow had been directed overboard instead. The gas venting pipes on the Deepwater Horizon's mud-gas separator were goose-necked, which meant that they directed the vented gas downward toward the vessel. When huge volumes of gas began to hiss out of the Macondo well, these goose-necked vents effectively spread highly flammable gas all over the vessel's decks, increasing the likelihood that the gas would find an ignition source.

3.134 The volume and pressure of the gas rushing out of the well eventually overwhelmed the mud-gas separator entirely, bursting its seals and allowing the gas to spread directly under the vessel deck as well. This effectively enveloped the Deepwater Horizon in a highly flammable cloud of gas.

3.135 The blowout worsened as the high pressure gas flow caused the failure of surface equipment on the drilling vessel. As each of these seals and systems gave way

under the immense pressure, additional flow paths were opened and the blowout gained strength.

3.136 The drilling vessel workers, following Transocean's insufficient well shut-in protocol, closed two of the BOP's non-shearing rams, which eventually sealed around the drill pipe at 9:47 p.m. At this point, all flow paths from the well to the drilling vessel, except for the drill pipe, were sealed off; flow up the drill pipe was prevented by pressure in that pipe. With the BOP rams now blocking hydrocarbons from entering the riser along the sides of the drill pipe, the blowout could have been contained at this point, had the gas on the drilling vessel not exploded.

### M. Faulty Vessel Safety Equipment Exacerbates the Blowout, Causing Vessel Explosions, Fire, and Sinking

3.137 The initial explosion on the Deepwater Horizon on the night of April 20, 2010, was caused by an engine on the vessel deck that sucked in the gas blasting down on the decks from the mud-gas separator vents.

3.138 Gas sensors, designed to shut down vessel engines when dangerous vapors are present, are critical to preventing explosions in such situations. The gas sensors, and the emergency engine shutdown systems connected to them, were not operational aboard the Deepwater Horizon on the night of the blowout. Moreover, the automated feature that should have closed the engine's air intake valves upon sensing gas entering the engine room also failed.

3.139 Furthermore, the Deepwater Horizon's engine room was not equipped with a gas alarm system that could have shut off the power. The installation and maintenance of these sensors, alarms, and emergency shutdown systems on the Deepwater Horizon were the responsibility of Transocean, the vessel's owner.

3.140 At approximately 9:48 p.m., the gas was sucked into one of the Deepwater Horizon's engines and caused it to begin to over-speed. The vessel lost power less than a minute later and was almost immediately struck with two explosions, which ignited the gas enveloping the vessel. The blaze intensified as damage from the explosions and fire opened new flow paths for the flammable gaseous hydrocarbons spewing out of the well. Gaseous hydrocarbons poured onto the vessel from several flow paths, feeding the inferno that engulfed the Deepwater Horizon and ultimately killed eleven crew members, injured seventeen others, and destroyed the vessel.

**1. The Failure of the BOP**

3.141 Immediately after the explosion, desperate vessel workers tried to activate the emergency disconnect sequence on the Deepwater Horizon's BOP. However, problems and failures with each of the BOP's emergency activation methods prevented the use of the Deepwater Horizon's BOP to seal the well, paralyzing its powerful shear rams that should have slammed shut, severing the drill pipe, and quelling the blowout.

3.142 The Macondo well's BOP had several emergency activation methods: the high-pressure closure of the blind shear ram, the emergency disconnect sequence[5] ("EDS"), the automatic mode function[6] ("AMF"), and activation via remotely operated vehicles

[5] The EDS disconnects the drilling vessel from the well by detaching the riser from the top of the BOP, allowing the vessel to move away from the well. The EDS also triggers the closure of the blind shear ram to seal off the well, itself.

[6] The AMF is activated when electricity, hydraulics, and communications from the drilling vessel are all severed. Powered by hydraulic pressure from accumulators and batteries on the BOP, itself, the AMF's functionality is independent from the vessel and is not affected by loss of power or hydraulics on the vessel, itself.

(ROVs) on the seafloor using the "hotstab"[7] or autoshear[8] functions. None of these were able to activate the BOP to seal the well.

3.143 The explosions and fire on the Deepwater Horizon disabled the only two emergency activation methods available to workers on the vessel: the high-pressure closure of the blind shear ram and the EDS. From the BOP control panels on the vessel, workers could push buttons for either of these functions, but both required communication with the BOP, itself, via multiplex cables running from the vessel to the BOP on the seafloor. These multiplex cables were not protected against explosions or fire; and it is likely that they were damaged during or immediately after the first explosion, effectively disabling the vessel workers' ability to communicate with the BOP.

3.144 The AMF sequence initiates when electrical power, communications, and hydraulic pressure are lost to both control pods on the BOP, circumstances that were certainly satisfied once the multiplex cables and the also-unprotected hydraulic conduit hose on the Deepwater Horizon were damaged by the explosions and/or fire. Poor maintenance of the BOP prevented the completion of the AMF sequence to close the blind shear ram.

3.145 The Deepwater Horizon's BOP had two independent control pods, a redundancy intended to reduce the risk that control pod failure would jeopardize BOP functionality, but Transocean's substandard BOP maintenance prevented either of the two pods from completing the AMF sequence on the night of the blowout. Examination and tests performed on the control pods after the disaster found a faulty solenoid valve and one

[7] An ROV can activate certain BOP functions, such as the blind shear ram, by performing a hot stab, injecting hydraulic fluid into dedicated ports on the BOP to close the rams.
[8] An ROV can activate the autoshear function by snipping a rod on the BOP, triggering the closure of the blind shear ram.

battery with low charge in one pod, and two dead batteries in the other pod. Investigators concluded that these problems existed prior to April 20, 2010, and were significant enough to prevent either control pod from completing the AMF sequence to close the BOP's blind shear ram.

3.146 BOP maintenance was Transocean's responsibility, but BP and the other Defendants were aware of Transocean's infrequent and inadequate maintenance of the device. The faulty solenoid valve on one of the control pods would have shown up on the BOP control diagnostic system onboard the drilling vessel, which was accessible to all and should have alerted all of the Defendants to the problem.

3.147 Transocean's BOP maintenance records from 2001 to 2010, which were also available to Defendants at all times, indicate that the control pod batteries were changed far less frequently than the manufacturer's recommended annual replacement. Unlike the solenoid valve failure, the BOP's diagnostic function would not have shown a low battery charge, all the more reason for Transocean to proactively change the batteries frequently to avoid failure. But, as the other Defendants knew, Transocean had neglected the BOP batteries before – a November, 2007 activity report recorded that when the BOP was brought to the surface, all of the batteries in one of the pods were dead.

3.148 Defendants were aware that during the entire duration of operations at Macondo, the Deepwater Horizon's BOP was out of certification and long overdue for extensive maintenance and repair. Although the BOP's manufacturer required manufacturer testing of the device every five years, the Deepwater Horizon's BOP had not been sent to the manufacturer for inspection since 2000.

3.149 The BOP had not undergone a thorough series of maintenance checks since 2005, despite significant problems uncovered within the device during that inspection. During the 2005 inspection, it was discovered that the BOP's control panels gave unusual pressure readings and flashed inexplicable alarm signals, while a "hot line" connecting the vessel to the BOP was badly leaking fluid. An independent engineering company was hired to assess the BOP, but could not perform all of its examinations – including verification that the Deepwater Horizon's BOP could effectively shear drill pipe and seal off wells in high pressure, deepwater conditions – because the BOP was in use and inaccessible on the sea floor, and BP and Tranocean would not stop work to bring it up.

3.150 A Transocean-commissioned independent audit of the vessel in April of 2010, just before the blowout, again revealed a range of problems with the Deepwater Horizon's BOP, including a leaking door seal, pump parts needing replacement, error-response messages, and "extraordinary difficulties" surrounding the maintenance of the BOP's annular valves.

3.151 In keeping with its lax approach to BOP maintenance, Transocean had also failed to recertify the Deepwater Horizon's BOP, as required by federal regulations, because recertification would require a full disassembly of the device and more than ninety days of downtime.

3.152 After the explosions and as the Deepwater Horizon was burning on the surface, emergency responders sent ROVs to the sea floor to attempt to close the blind shear ram using the "hot stab" or autoshear functions. Several hot stab attempts to close the blind shear ram failed due to insufficient hydraulic pressure. Over the course of these events, a number of leaks were discovered in the BOP's hydraulic system, as well as

incorrect hydraulic plumbing from the ROV intervention panel to the pipe rams, which was likely the result of aftermarket modifications to the BOP.

3.153 Hydraulic system integrity is critical to the proper functioning of a BOP. Hydraulic pressure supplies the force used to close the various rams in the device, if there is insufficient hydraulic pressure due to leaks, the system will not be powerful enough to close the rams with enough pressure to create a seal against highly pressurized hydrocarbons in the well.

3.154 Ultimately, six leaks were discovered in the hydraulic system of the Macondo well's BOP. Defendants were aware of at least two, but likely almost all, of these leaks prior to April 20, 2010. One leak was discovered in February of 2010, but was never repaired or otherwise addressed by Defendants. Weekly BOP function tests should have made Defendants aware of the other hydraulic system leaks identified during the ROV intervention.

3.155 Defendants were also aware of the aftermarket modifications that hindered the emergency responders' ability to activate the BOP via hot stab procedures. In addition to incorrectly installed aftermarket hydraulic plumbing, Defendants had switched out one of the Deepwater Horizon's variable bore rams with a non-functional test ram. But after the blowout, emergency responders spent a day futilely trying to close that missing variable bore ram, not knowing it had been replaced with a useless test part, because Defendants hadn't updated the BOP's schematic diagram to reflect the aftermarket changes – a violation of 29 C.F.R. § 1910.119, which requires, *inter alia*, up-to-date process and safety system equipment drawings as a part of basic process safety management.

3.156 Defendant officials were aware of the faulty solenoid valve, poor battery maintenance, hydraulic fluid leaks, and aftermarket modifications on the Deepwater Horizon's BOP long before the April 20, 2010 blowout, but no action was ever taken to address the problems, perhaps because additional delays and costs would accrue as all well work stopped and the BOP was raised from the sea floor for repairs. In addition to posing a significant safety risk, Defendants' choice to continue drilling with a faulty hydraulic system violated federal regulations, which require companies to disclose problems to the MMS and to stop drilling if either of a BOP's two control systems is not working properly.

3.157 Despite vessel workers' efforts just after the blowout and emergency engineers' efforts in the weeks after the blowout and sinking, the Deepwater Horizon's blind shear ram never successfully sealed the well. Although tests determined that the ROVs had activated the high-pressure blind shear ram close function by cutting the autoshear rod, the well continued to spew oil into the Gulf of Mexico.

3.158 At the time of the disaster, Defendants were certainly aware that in addition to increasing the risk of blowouts, deep-sea drilling also increases the risk of BOP failure. Defendants were also aware that the industry and government had major concerns about the reliability of BOPs, such as the one installed on the Deepwater Horizon, particularly that BOPs may not function in deepwater drilling environments because of the increased force needed to pinch and cut the stronger pipes used in deepwater drilling.

3.159 Despite being aware of the risk of the BOP failing at greater depths, Defendants did not install back-up BOP activation systems, back-up BOPs, or other secondary redundant precautionary measures available to protect the vessel, its workers, Plaintiffs, and the environment from the catastrophic results of a well blowout.

3.160 The Deepwater Horizon's BOP was outfitted with only one blind shear ram. But blind shear rams are vulnerable to a "single-point failure." This fact was known to Defendants and contributed to the Deepwater Horizon crew's ability to activate the BOP blind shear ram and the failure of the ram's blades to cut through the drain pipe.

3.161 Vulnerabilities like the BOP blind shear ram's single-point failure risk were well understood by Defendants and the rest of the oil industry. When the Deepwater Horizon went into service in 2001, Transocean was already equipping its newer drilling vessels with BOPs that could accommodate two blind shear rams. Nevertheless, neither Transocean nor BP refitted the Deepwater Horizon's BOP with two blind shear rams.

3.162 Defendants were also well aware of the benefits of redundant blind shear rams. In May of 2003, the Discoverer Enterprise – a Transocean vessel operated by BP, just like the Deepwater Horizon – was rocked when the riser pipe connecting the vessel to the wellhead cracked open in two places. The BOP was activated and the first blind shear ram closed. After robots checking the integrity of the BOP noticed damage, the second blind shear ram was also closed to provide an extra layer of protection against a blowout. Despite this first-hand knowledge of the necessity of redundant blind shear rams, BP and Transocean used one of the slots on the BOP for the non-functional test ram.

3.163 If the BOP on the Macondo wellhead had been functional and properly maintained by Transocean, it could have been manually or automatically activated right after the explosion, stopping the blowout at the wellhead, limiting the Oil Spill to a minute fraction of its ultimate severity, and thereby sparing Plaintiffs millions of dollars in losses and damage.

3.164 Defendants BP and Transocean failed to ensure that the BOP present on the Deepwater Horizon's possessed reasonably safe, adequate, functional technology to prevent blowouts.

3.165 Defendants BP and Transocean failed to ensure that the Deepwater Horizon's BOP had sufficient, functional, built-in redundancy to eliminate single-point failure models.

3.166 Defendants BP and Transocean failed to ensure that all foreseeable repairs, if any, and foreseeable modifications, if any, to the Deepwater Horizon's BOP were performed, completed, and tested with the drilling vessel's operations shut down and the well secured.

3.167 Defendants BP and Transocean, and one or more of the other Defendants, failed to ensure that the testing, if any, of the Deepwater Horizon's BOP was comprehensive, reviewed, and verified, and further failed to check and verify the BOP's entire operating and control system including, but not limited to, checking for leaks at ROV connection points and verifying the functionality of the AMF and/or autoshear.

3.168 Defendants BP and Transocean could have ensured that a BOP and/or back-up BOP with sufficient strength and reliability for deepwater drilling was present and available on the Deepwater Horizon, but did not do so.

3.169 Defendants BP and Transocean could have installed a back-up acoustic trigger to activate the Deepwater Horizon's BOP in the event that the main trigger failed to activate. Prior to the blowout, federal regulators at the MMS communicated to one or more of the Drilling Defendants in 2000 that MMS considered a back-up BOP activation system to be an essential component of a deepwater drilling system.

3.170 Despite this notice, and although the back-up acoustic BOP trigger is a common drilling vessel requirement in other oil-producing nations, including other areas where Defendants operate, the Deepwater Horizon was not equipped with this back-up acoustic BOP trigger.

**2. Poor Vessel Maintenance and Reckless Bypass of Safety Systems**

3.171 The BOP was not the only part of the Deepwater Horizon that was poorly maintained and in disrepair at the time of the blowout. Transocean, the vessel's owner, had a history of postponing and ignoring needed maintenance on the Deepwater Horizon, despite concerns raised by its own employees and other vessel workers. In the weeks before the blowout, the Deepwater Horizon suffered power outages, computer glitches, and a balky propulsion system. In some cases, Transocean officials even purposely overrode or disabled vital safety mechanisms and alarms. When the Macondo well blew out, the Deepwater Horizon's substandard maintenance facilitated a cascade of failures of multiple emergency systems, exacerbating the disaster.

3.172 The Deepwater Horizon had a number of ongoing equipment problems at the time of the blowout, some of which contributed to the failure of back-up generators that should have powered safety and shutdown devices immediately before the blowout. Vessel-wide electrical failures had occurred before April 20, 2010, and the vessel had experienced considerable computer and propulsion failures for some time.

3.173 Furthermore, key safety systems and alarms on the Deepwater Horizon had been intentionally bypassed or disabled by Transocean. On April 20, 2010, a pressure regulator valve, which automatically cuts off gas flow at a certain pressure point and could have helped stop the blowout, was in "bypass" mode when the gaseous hydrocarbons blew

out of the Macondo well. Crewmen had repeatedly expressed concern about bypassed safety systems to Transocean supervisors, but those concerns were disregarded.

3.174 A fire alarm system on the vessel was also partially disabled at the time of the blowout, and had been for at least a year. The system was set to "inhibited" mode, meaning that the control panel would indicate a problem, but a general alarm would not sound throughout the vessel unless manually activated.

3.175 Upon information and belief, had Transocean not disabled the alarm systems, the system would have sounded alarms just after the blowout, shut down all potential ignition sources, and activated the drilling vessel's EDS, which would have prevented the explosion and likely saved the lives of the eleven vessel workers who perished in the disaster.

3.176 When the Deepwater Horizon lost power during the blowout, none of the back-up or emergency generators worked, leading to a loss of all communications and power. This equipment that was onboard for the very purpose of providing power to alarm and safety systems in just such an emergency. Without power, the crew was unable to engage the EDS that would have stopped the flow of gas fueling the fire on the vessel, and many other alarm and safety systems were rendered silent and useless.

3.177 An equipment assessment commissioned by Transocean in April of 2010, just before the blowout, revealed that many key components on the Deepwater Horizon had not been fully inspected since 2005, and at least thirty-six components and systems on the vessel were in "bad" or "poor" condition, which "may lead to loss of life, serious injury or environmental damage as a result of inadequate use and/or failure of equipment." The equipment assessment also found problems with the vessel's ballast system that could

directly affect the stability of the ship. The assessment found a malfunctioning pressure gauge and multiple leaking parts, and also faulted the decision to use a type of sealant "proven to be a major cause of pump bearing failure." The findings of the Transocean-commissioned equipment assessment were consistent with the results of a similar BP-commissioned audit that had been conducted in September of 2009. In a confidential worker survey conducted on the Deepwater Horizon just weeks before the blowout, Transocean employees voiced concerns about poor equipment reliability.

3.178 The other Defendants were all aware of Transocean's poor maintenance of the Deepwater Horizon and its practice of disabling or bypassing vital safety systems and alarms, yet none of them called for work to stop until vessel safety was improved, and none of them reported Transocean's actions and inactions to the MMS.

**N. Drilling Defendants' Culture of Complacency**

3.179 All the evidence of Defendants' misguided priorities and imprudent decisions regarding the Macondo well and the Deepwater Horizon described above demonstrates a culture of complacency on the part of the Defendants. This complacency was especially deplorable considering the fact that workers and leaders on the Deepwater Horizon had just survived a near miss – the March 8, 2010 influx that went unnoticed for thirty-three minutes, allowing forty barrels of hydrocarbons to leak into the well before it was shut in. That event should have been a lesson learned for Defendants; however, just six weeks later, their haste and carelessness again led them to miss signs of an influx, this time for an even longer period of forty-nine minutes, causing them not to notice the breach until it was too late.

3.180 Defendants' hazardous approach to their respective responsibilities regarding the Deepwater Horizon Macondo well was in direct violation of federal regulations intended to maintain public safety. Pursuant to 33 C.F.R. 250.107, Defendants were required to protect health, safety, property, and the environment by (1) performing all operations in a safe and workmanlike manner; and (2) maintaining all equipment and work areas in a safe condition. They were further required to immediately control, remove, or otherwise correct any hazardous oil and gas accumulation or other health, safety, or fire hazard and use the "best available and safest technology" whenever practical on all exploration, development, and production operations. Defendants' violation of these regulatory mandates caused and/or contributed to the Macondo well blowout and the subsequent explosions, fire, sinking, and Spill.

3.181 This culture of carelessness and impudence was not limited to Defendants' actions and decisions on the Deepwater Horizon at the Macondo well. In fact, Defendants have a history of foolhardy, irresponsible behavior across their operations on land and at sea – a record littered with accidents, spills, regulatory violations, fines, and lawsuits.

3.182 Despite a history of catastrophes and close calls, BP has been chronically unable or unwilling to learn from its many mistakes. The company's dismal safety record and disregard for prudent risk management are the results of a corporate safety culture that has been called into question repeatedly by government regulators and its own internal investigations. BP has consistently demonstrated that it will choose profit before safety at the expense of human lives and the environment. Moreover, the company's actions imply that it would rather pay fines than comply with U.S. law, as paying those fines, if and when its negligence is actually discovered, is ultimately a cheaper long-term

strategy than regulatory compliance. This deficient corporate culture has been cited as a primary contributor to previous disasters at BP facilities, and is ultimately to blame for BP's grossly negligent decisions concerning the Macondo well, decisions made with willful, wanton, and reckless indifference to the foreseeably tragic results to the workers aboard the drilling vessel, the environment, and the economy.

3.183 Prior incidents, investigations, and testimony from congressional hearings have shown that BP actively discourages workers from reporting safety and environmental problems. Reports from multiple investigations of other BP disasters all indicate a pattern of intimidating, and sometimes firing, workers who raise safety or environmental concerns.

3.184 BP's marginal ethics are well known to its competitors and others in the oil and gas industry, yet other companies, including Defendants, continue to work with BP closely and frequently. BP is one of Halliburton's largest oil drilling and cement operations customers. Halliburton has worked with BP on a great number of projects over the past decade, despite being aware of BP's flagrant and pervasive disregard for safety and constant reckless risk-taking in the pursuit of profits.

3.185 Like BP, Transocean's corporate culture is also skewed toward profits at the expense of safety, according to the results of the broad review of its North American operations made before the blowout. Workers complained of poor equipment reliability that they attributed to "drilling priorities taking precedence over planned maintenance."

3.186 Decisions, tradeoffs, actions, and inactions by Defendants, including the risky well design, inadequately-tested cement, tests that were skipped or misinterpreted, and procedures that deviated from industry norms, all contributed to and practically ensured the blowout at the Macondo well. At no time did any of Defendants report regulatory

violations to the authorities, or call to stop work because of unsafe decisions, plans, actions, or conditions in the well or on the vessel. The carelessness, nonchalance, inexperience, and distraction of Defendants resulted in insufficient well monitoring and overlooking the signs of an influx for forty-nine minutes prior to the blowout. Once the well blew out, Defendants' poor vessel maintenance and intentional bypass of alarms and emergency systems contributed to the failure of safety mechanisms, exacerbated the disaster, and likely caused the unnecessary deaths and injuries of vessel workers, and the destruction of the Deepwater Horizon. Underlying it all, Defendants' corporate cultures of trading safety for speed, production, and profit, and encouraging their employees to do the same, sped the inevitable approach of catastrophe.

### O. Defendants Misrepresent the Severity of the Oil Spill and their Oil Spill Response Capabilities

3.187 On the night of April 20, after the explosions ignited the vessel, the resulting gas-fueled fire on the Deepwater Horizon raged for two days, as the vessel listed progressively and finally sank on April 22, 2010. On the sea surface, the Deepwater Horizon had been connected to the wellhead at the seafloor by a 5,000-foot marine riser pipe, and as the vessel sank to the seafloor, it dragged the riser down with it, bending and breaking the pipe before finally tearing away from it completely. The riser, bent into a crooked shape underwater, now extended 1,500 feet up from the wellhead and buckled back down. Immediately, oil and natural gas began to gush from the open end of the riser and from at least two places along its twisted length.

3.188 For eighty-seven days, the surge of oil and gas from the gushing well continued unabated, and the Oil Spill's fast-growing oil slick made landfall on April 30, 2010, ultimately reaching Mississippi territorial waters, seabeds and land. The oil damaged

the pristine beaches and delicate wetlands, marshes, and estuaries that line the Mississippi Gulf Coast, destroying the habitats of spawning sites of marine life, as well as harming State tax collections and causing other damage.

3.189 From the outset, BP attempted to downplay and conceal the severity of the Oil Spill. BP's initial leak estimate of 1,000 barrels per day was found by government investigators to be a fraction of its actual measured leakage amount of 50,000 barrels per day. BP knew that their unbelievably conservative estimates were wrong and that the amount of oil being released could reach as high as 100,000 barrels, or 4,200,000 gallons, per day.

3.190 BP's obstructionist behavior regarding accurate data continued as the Oil Spill progressed; BP did not provide complete and timely announcements and warnings about the severity, forecast, and trajectory of the Oil Spill, and stymied scientists' efforts to gauge the scope of the disaster on land and at sea.

3.191 Just as BP was understating the severity of the Oil Spill, it soon became clear that BP had previously overstated its ability to respond to a spill. In its Initial EP, submitted prior to beginning work at Macondo, BP had assured the MMS that it could effectively contain any spill up to 250,000 barrels of oil per day, using "proven equipment and technology." In reality, BP was not prepared for an oil spill of any size.

3.192 Despite the constant risk of a spill at any one of its many Gulf of Mexico wells, BP did not have a realistic response plan, a containment barge, skimming vessels, a response crew, or recovery material like containment boom, ready and available to deploy immediately in an emergency. On the contrary, the Oil Spill response could not begin until

the U.S. government, including the Coast Guard and the Navy, brought in skimmers, boom, and other materials, and volunteers were found to assist with the cleanup.

3.193 BP also hindered efforts to kill the Macondo well and stop the flow of oil and gas into the Gulf waters. Engineers knowledgeable about blowout responses told BP how to kill the well as early as June of 2010; however, BP, after conferring with its Macondo lease partners, Anadarko, Anadarko E&P, and Moex Offshore, chose to ignore the engineers' well-kill procedure because BP did not want to damage the well – or its chance to make a profit at Macondo. Because BP, along with its lease partners, hoped to retap the Macondo well and the large, valuable reservoirs beneath it, they ignored expert well-kill information that could have stopped the Oil Spill many weeks earlier.

### P. Impact of the Oil Spill on Plaintiff, the Environment and the Mississippi Economy

3.194 For over twelve weeks, millions of barrels of raw crude oil, emulsified and weathered oil, natural gas, chemical dispersants, and other toxic pollutants were discharged into the Gulf of Mexico and upon Mississippi shorelines, causing immense environmental and economical harm to the entire region.

3.195 The oil released in the course of the Oil Spill contains benzene, toluene, polyaromatic hydrocarbons and other compounds (collectively referred to as Total Petroleum Hydro carbons or "TPH"), all of which are known carcinogens. Discharge of the toxic pollutants, as identified in 40 C.F.R. § 401.15, likely includes, but is not limited to, benezene, toluene, naphthalene, polynuclear aromatic hydrocarbons (including, but not limited to, phenanthrene, benzanthracenes, benzophyrenes, benzofloranthene, crysenes, dibenzanthracenes and idenopyrenes), fluroathene, arsenic, cadmium, copper, mercury and nickel, all of which are hazardous to the health of humans and marine life. Upon

information and belief, BP has analyzed and knows the exact concentrations of each of the toxic pollutants present in the oil coming from its wells.

3.196 As a direct result of the Oil Spill, the State has suffered past, and continues to suffer, damages to the State and its marine life, other wildlife, flora, fauna, coastal wetlands, property, estuaries, seabeds, animals, plants, islands, and other natural and economic resources of Mississippi. The State has incurred and will continue to incur the costs of assessment, remediation and clean up associated with this environmental pollution.

3.197 The Oil Spill has not only had a severe impact on environment, but it has substantially impacted the State's tax collections and has caused or will cause expenditures by various state agencies, divisions and departments, including, but not limited to, the Mississippi Department of Employment Security and the Department of Archives and History. The Oil Spill has also caused damage to property owned by the State, resulting in physical damage, the incurrence of removal costs, diminution of property values and other related costs and expenses.

## CLAIMS FOR RELIEF

### 1. The Oil Pollution Act versus BP, Transocean & Anadarko

4.1 Plaintiff realleges each and every allegation set forth in all preceding paragraphs as if fully restated here.

4.2 The Oil Pollution Act, 33 U.S.C. § 2701, *et seq.* (the "OPA"), imposes liability upon a "responsible party for a ... vessel or a facility from which oil is discharged ... into or upon navigable waters or adjoining shorelines" for the damages that result from such incident as well as removal costs. 33 U.S.C. § 2702. Responsible parties for an offshore facility include the lessee or permittee of the area in which the facility is located or the

holder of a right to use an easement granted under applicable state law or the Outer Continental Shelf Lands Act (43 U.S.C. § 1301 et seq.) for the area in which the facility is located. Responsible parties also include any person owning, operating, or demise chartering the vessel. 33 U.S.C. § 2701(32).

4.3 The United States Coast Guard has designated Transocean Holdings Incorporated and BP Exploration and Production, Inc. as responsible parties for the Oil Spill in letters dated April 28, 2010.

4.4 Defendants Anadarko and Anadarko E&P held a leasehold interest in a lease granted by the MMS for Block 252, Mississippi Canyon (the "Macondo lease"), an oil lease on lands beneath navigable waters, before and/or at the time of the Oil Spill. As such, they were lessees of the area within which the well (an "offshore facility") was located at the time of the Oil Spill and are responsible parties pursuant to Section 2701 (16) and (32) of the OPA. As such, they are strictly liable pursuant to Section 2702 of the OPA for all the damages resulting from the Oil Spill.

4.5 Defendants are not entitled to limit their liability under Section 2704(a) of the OPA because the Oil Spill was proximately caused by their gross negligence, willful misconduct or violation of applicable safety, construction or operating regulations. 33 U.S.C. § 2704(c).

4.6 Moreover, in its "Statement of BP Exploration & Production Inc. Re Applicability of Limitation of Liability Under Oil Pollution Act of 1990," filed on October 19, 2010, BP waived the statutory limitation on liability under the OPA.

4.7 As a result of the Oil Spill, Plaintiff is entitled to damages pursuant to Section 2702(b)(2), which provides for recovery of damages by the State as follows:

(a) damages for injury to, destruction of, loss, or loss of use of, natural resources, including the reasonable costs of assessing the damage;

(b) damages for injury to, or economic losses resulting from the destruction of, real or personal property owned by the State;

(c) damages equal to the net loss of taxes, royalties, rents, fees or net profit shares due to the injury, destruction of real property, personal property, or natural resources; and,

(d) damages for net costs of providing increased or additional public services during or after removal activities caused by the Oil Spill.

4.8 To the extent required by law, and/or by consent or stipulation by BP, Plaintiff has, pursuant to 33 U.S.C. §§ 2713, presented its claim to BP and/or its agents or designees and co-responsible parties and the claim has not been paid. The State continues to assess the breath of its damages and may make additional presentments to the Defendants.

4.9 The State of Mississippi has incurred, and will continue to incur, removal costs related to the unauthorized discharge or threat of discharge of oil, gas and other pollutants and the costs related to preventing, mitigating, and minimizing oil pollution which has impaired or threatens to impair Mississippi's marine life, other wildlife, flora, fauna, coastal wetlands, property, estuaries, seabeds, animals, plants, islands, and other natural and economic resources.

4.10 The State requests that this Court enter a declaratory judgment finding that the BP, Transocean and Anadarko have unlimited joint, several and strict liability under the OPA for the State of Mississippi's damages resulting from the *Deepwater Horizon* disaster,

and that the State is entitled to relief as set forth above, and such further relief as may be deemed appropriate pursuant to 28 U.S.C. § 2201 and 28 U.S.C. § 2202, *et seq.*

4.11 Pursuant to the Declaratory Judgment Act, 28 U.S.C. § 2201 *et seq.*, and Rule 57 of the Federal Rules of Civil Procedure, as well as OPA, 33 U.S.C. § 2717(f)(2), the State seeks a judicial declaration, which shall be binding on subsequent actions by the State to recover damages and removal costs, that BP, Transocean and Anadarko are responsible parties under the OPA, 33 U.S.C. § 2701 *et seq.* and are liable for all removal costs and damages arising out of the *Deepwater Horizon* disaster.

4.12 The State further seeks all damages available to it pursuant to OPA.

**2. General Maritime Law versus Halliburton**

4.13 Plaintiff realleges each and every allegation set forth in all preceding paragraphs as if fully restated herein.

***GML Negligence versus Halliburton***

4.14 At all times material hereto, and as set forth hereinabove, Halliburton was participating in drilling operations onboard the Deepwater Horizon in the Gulf of Mexico and owed and breached duties of ordinary and reasonable care to Plaintiff in connection with the drilling operations of the Deepwater Horizon and the maintenance of the vessel, its appurtenances and equipment, and additionally owed and breached duties to Plaintiff to guard against and/or prevent the risk of an oil spill.

4.15 The existence and breach of these legal duties are established under general maritime law.

4.16 The State of Mississippi was within an appreciable zone of risk and, as such, Halliburton was obligated to protect it from damage and injury.

4.17 The blowout and explosions on the Deepwater Horizon, its sinking and the resulting Spill was caused by Halliburton's negligence which renders it liable to Plaintiff.

4.18 Halliburton knew of the dangers associated with deepwater drilling and failed to take appropriate measures to prevent damage to Plaintiff, including Plaintiff's marine and coastal environments and estuarine areas.

4.19 Halliburton was under a duty to exercise reasonable care while participating in drilling operations on the Deepwater Horizon to ensure that a blowout and subsequent oil spill did not occur as a result of such operations.

4.20 Halliburton was under a duty to exercise reasonable care to ensure that if crude oil discharged in the event of a blowout, that it would be contained and/or stopped within the immediate vicinity of the Deepwater Horizon in an expeditious manner.

4.21 Halliburton knew or should have known that the acts and omissions described herein could result in damage to Plaintiff.

4.22 Halliburton failed to exercise reasonable care while participating in drilling operations to ensure that a blowout and subsequent oil spill did not occur, and thereby breached duties owed to Plaintiff.

4.23 Halliburton failed to exercise reasonable care to ensure that oil would expeditiously and adequately be contained within the immediate vicinity of the Deepwater Horizon in the event of a blowout, and thereby breached duties owed to Plaintiff.

4.24 Halliburton failed to exercise reasonable care to ensure that adequate safeguards, protocols, procedures and resources would be readily available to prevent and/or mitigate the effects of an uncontrolled oil spill into the waters of the Gulf of Mexico, and thereby breached duties owed to Plaintiff.

4.25 In addition, the BSEE found that Halliburton violated the following federal regulations:

(a) Halliburton failed to protect health, safety, property and the environment by failing to perform all operations in a safe and workmanlike manner, in violation of 30 C.F.R. § 250.107(a)(1);

(b) Halliburton did not take measures to prevent unauthorized discharge of pollutants into offshore waters, in violation of 30 C.F.R. § 250.300;

(c) Halliburton failed to take necessary precautions to keep the well under control at all times, in violation of 30 C.F.R. § 250.401(a);

4.26 The violations of these statutory standards constitute negligence per se under general maritime law.

4.27 At all times material hereto, Halliburton was responsible for cementing the well that was the subject of the Oil Spill, and further was engaged in testing, analysis, and monitoring of the aforementioned well.

4.28 At all times material hereto, Halliburton owed duties to Plaintiff to, *inter alia*, exercise reasonable care in conducting its cementing, testing, analysis and monitoring of the Deepwater Horizon's well.

4.29 Halliburton breached its duties to the State by, *inter alia*, failing to exercise reasonable care in conducting its cementing, testing analysis, and monitoring of the Deepwater Horizon's well.

4.30 Halliburton was negligent by, *inter alia*, failing to use a full "bottoms-up" circulation of mud between the running of the casing and the beginning of the cement job in violation of industry standards, failing to require comprehensive lab testing to ensure the density of the cement, and failing to heed the ominous results of negative pressure testing which indicated that the cement job was defective, cancelling, or acquiescing in the

cancellation of the cement bond log test that would have determined the integrity of the cement job; failing to deploy, or acquiescing in the decision not to deploy, the casing hanger lockdown sleeve to prevent the wellhead seal from being blown out by pressure from below, all of which proximately caused and/or contributed to the State's injuries and damage.

4.31 In addition to the negligent actions described herein, and in the alternative thereto, the injuries and damages suffered by Plaintiff were caused by the acts and/or omissions of Halliburton that are beyond proof by the Plaintiff, but which were within the knowledge and control of Halliburton, there being no other possible conclusion than that the Oil Spill resulted from the negligence of Halliburton. The Oil Spill would not have occurred had the Defendants satisfied the duty of care imposed on them and Plaintiff, therefore, pleads the doctrine of *res ipsa loquitur*.

4.32 In addition to the foregoing acts of negligence, Plaintiff avers that the Oil Spill was caused by Halliburton in the following non-exclusive particulars:

(a) failing to properly conduct its operations on the Deepwater Horizon;

(b) conducting operations on the Deepwater Horizon in such a manner that a fire and explosions occurred onboard, causing it to sink and resulting in the Oil Spill;

(c) failing to properly inspect the Deepwater Horizon to assure that its equipment and personnel were fit for the intended purpose of Halliburton's operations;

(d) acting in a careless and negligent manner without due regard for the safety of others;

(e) failing to promulgate, implement and enforce rules and regulations pertaining to the safe operations of Halliburton's operations on the Deepwater Horizon which, if they had been so promulgated, implemented and enforced, would have averted the blowout, explosions, fire sinking and Oil Spill;

(f) operating on the Deepwater Horizon with untrained and unlicensed personnel;

(g) negligently hiring, retaining and/or training personnel;

(h) failing to take appropriate action to avoid or mitigate the accident;

(i) negligently implementing or failing to implement policies and procedures to safely conduct offshore operations in the Gulf of Mexico;

(j) failing to ascertain that the Deepwater Horizon and its equipment were free from defects and/or in proper working order;

(k) failing to warn in a timely manner;

(l) failing to timely bring the oil release under control;

(m) failing to provide appropriate accident prevention equipment;

(n) failing to observe and read gauges that would have indicated excessive pressures in the well;

(o) failing to react to danger signs; and

(p) such other acts of negligence and omissions as will be shown at the trial of this matter; all of which acts are in violation of the general maritime law.

4.33 Plaintiff is entitled to a judgment finding Halliburton liable to Plaintiff for damages suffered as a result of Halliburton's negligence and awarding Plaintiff adequate compensation therefor in amounts determined by the trier of fact.

4.34 The injuries to Plaintiff were also caused by and/or aggravated by the fact that Halliburton failed to take necessary actions to mitigate the danger associated with their operations.

4.35 As a direct and proximate result of Halliburton's negligence, agencies, counties, departments, divisions, municipalities and subdivisions of the State of Mississippi

sustained physical injury to its proprietary interest in its public lands, wetlands, flora, fauna, waters and the seabed, which has caused damage and losses for which Halliburton is liable. These damages include, but are not limited to:

a. the costs of assessing and repairing the harm to antiquities;

b. the costs of unemployment pay and worker training and retraining;

c. the costs of assessment, remediation, clean-up, restoration and other associated and foreseeable costs incurred in conjunction with the encroachment of oil onto and resulting injury to the State and its marine life, other wildlife, flora, fauna, coastal wetlands, property, estuaries, seabeds, animals, plants, islands, and other natural and economic resources; and,

d. reduced tax collections.

***GML Gross Negligence versus Halliburton***

4.36 Plaintiff realleges each and every allegation set forth in all preceding paragraphs as if fully restated herein.

4.37 Defendant Halliburton owed and breached duties of ordinary and reasonable care to Plaintiff in connection with the maintenance of and drilling operation on, the Deepwater Horizon, and additionally owed and breached duties to Plaintiff to guard against and/or prevent the risk of the Oil Spill. The existence and breach of these legal duties are established under general maritime law.

4.38 Defendant Halliburton breached its legal duty to Plaintiff and failed to exercise reasonable care and acted with reckless, willful and wanton disregard in its negligent operations on the Deepwater Horizon.

4.39 Defendant Halliburton knew or should have known that their wanton, willful and reckless misconduct would result in a disastrous blowout and oil spill, causing damage to those affected by the Oil Spill.

4.40 Defendant Halliburton acted with gross negligence, willful misconduct and reckless disregard for human life and the safety and health of the environment and Plaintiff by, *inter alia*, failing to use a sufficient number of "centralizers" to prevent channeling during the cement process; failing to run a bottoms up circulation of the drilling mud prior to beginning the cement job; disregarding proper drilling, casing, mudding and cementing procedures; failing to ensure that adequate safeguards, protocols, procedures and resources would be readily available to prevent and/or mitigate the effects an uncontrolled oil spill into the waters of the Gulf of Mexico.

4.41 Defendant Halliburton acted with gross negligence, willful misconduct and reckless disregard for human life and the safety and health of the environment and Plaintiff by, *inter alia*, using an inappropriate cement mixture for the well; failing to appropriately test that cement mixture prior to using it in the well; failing to run a cement bond log to evaluate the integrity of the cement job; and failing to deploy the casing hanger lockdown sleeve prior to commencing the mud displacement process in the well.

4.42 Defendant Halliburton acted with gross negligence, willful misconduct and reckless disregard for human life and the safety and health of the environment and Plaintiff by, *inter alia*, using an untested, abnormally large volume of mixed spacer solutions to avoid having to properly dispose of the two separate spacer substances as hazardous wastes.

4.43 As a direct and proximate result of Halliburton's gross negligence and willful misconduct, agencies, counties, departments, divisions, municipalities and subdivisions of the State of Mississippi sustained physical injury to its proprietary interest in its public lands, wetlands, flora, fauna, waters and the seabed, which has caused damage and losses for which Defendants are jointly and severally liable. These damages include, but are not limited to:

a. the costs of assessing and repairing the harm to antiquities;

b. the costs of unemployment pay and worker training and retraining;

c. the costs of assessment, remediation, clean-up, restoration and other associated and foreseeable costs incurred in conjunction with the encroachment of oil onto and resulting injury to the State and its marine life, other wildlife, flora, fauna, coastal wetlands, property, estuaries, seabeds, animals, plants, islands, and other natural and economic resources; and,

d. reduced tax collections.

**3. Punitive Damages under all claims against all defendants**

4.44 Plaintiff realleges each and every allegation set forth in all preceding paragraphs as if fully restated here, and assert, in additional support of their claims for punitive damages under the general maritime law:

4.45 Defendants engaged in conduct so reckless, willful, wanton and in such utter and flagrant disregard for the safety and health of the public and the environment in their activities leading up to and/or during the Oil Spill, as alleged herein, that an award of punitive damages against them at the highest possible level is warranted and necessary to impose effective and optimal punishment and deterrence. Plaintiff cannot afford and

should never be exposed to the risks of another disaster of the magnitude caused by Defendants' misconduct herein.

4.46 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their ultra-hazardous activities on the Deepwater Horizon by performing a critical well pressure test with untrained and unqualified personnel and by callously ignoring and/or misrepresenting abnormal "red flag" pressure test results.

4.47 Defendants' corporate culture caused and allowed them to disregard the lessons they should have learned and applied from previous incidents at their facilities that resulted in extensive damage and loss of life; instead, Defendants continued to place others at risk in the interests of cost-cutting and financial gain.

4.48 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their ultra-hazardous activities on the Deepwater Horizon by using a well design with too few barriers to gas flow.

4.49 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their ultra-hazardous activities on the Deepwater Horizon by failing to use a sufficient number of "centralizers" to prevent channeling during the cement process.

4.50 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their ultra-hazardous activities on the Deepwater Horizon by failing to run a bottom up circulation of the drilling mud prior to beginning the cement job.

4.51 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their highly dangerous activities on the Deepwater Horizon by using an inappropriate cement mixture for the type of rock formation surrounding the well, and by failing to appropriately test that cement mixture prior to using it in the well

4.52 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their highly dangerous activities on the Deepwater Horizon by failing to deploy the casing hanger lockdown sleeve prior to commencing the mud displacement process in the well.

4.53 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their highly dangerous activities on the Deepwater Horizon by using an untested, abnormally large volume of mixed spacer solutions to avoid having to properly dispose of the two separate spacer substances as hazardous wastes.

4.54 Defendants focused primarily on profit while disregarding public and environmental health and safety while undertaking their highly dangerous activities on the Deepwater Horizon by ignoring and/or misinterpreting abnormal, "red flag" pressure test results.

4.55 Defendants recklessly, willfully and/or wantonly caused or contributed to the catastrophic Oil Spill by their grossly inadequate maintenance and reckless and improper operation and use of the BOPs appurtenant to the Deepwater Horizon.

4.56 Defendants recklessly, willfully and/or wantonly failed to ensure that oil would expeditiously and adequately be contained within the immediate vicinity of the Deepwater Horizon in the event of a blowout.

4.57 Defendants recklessly, willfully and/or wantonly caused or contributed to the catastrophic Oil Spill through their collective and respective disregard for proper drilling, casing, mudding and cementing procedures.

4.58 Defendants willfully and/or wantonly failed to ensure that adequate safeguards, protocols, procedures and resources would be readily available to prevent and/or mitigate the effects of an uncontrolled oil spill into the waters of the Gulf of Mexico.

4.59 Defendants recklessly, willfully and/or wantonly failed to utilize reasonably safe dispersant chemicals in their haphazard attempts to respond to the Oil Spill and thereby exacerbated and worsened the pollution of the Gulf of Mexico.

4.60 In addition, after the blowout and before the well was finally sealed, BP was aware of procedures that would immediately block the flow of oil into the Gulf, yet it delayed the implementation of any such procedures, and limited its efforts to plug the well to options that would salvage the well for future use, instead of selecting procedures that would stop the flow of oil as soon as possible regardless of the well's continued functionality. As such, BP increased the magnitude of, and damage caused by, the Oil Spill by willfully and/or wantonly and recklessly choosing its profits over the lives of the workers on the vessel, the safety of the environment, and the health, welfare and value of the people, businesses and property of the Gulf states.

4.61 Defendants' conduct was oppressive, wanton, malicious, reckless or grossly negligent each time they:

(a) failed to properly maintain and/or operate the Deepwater Horizon;

(b) operated the Deepwater Horizon in such a manner the safety and integrity of the vessel and the well were disregarded to save time and money;

(c) ignored warnings that the integrity of the well, the cementing job and the vessel were in jeopardy;

(d) failed to promulgate, implement and enforce proper rules and regulations to ensure the safe operations of the Deepwater Horizon;

(e) violated MMS regulations for the safe design and operation of oil wells and drilling rigs in the Gulf of Mexico;

(f) failed to take appropriate action to avoid or mitigate the accident;

(g) failed to implement policies and procedures to safely conduct offshore operations in the Gulf of Mexico;

(h) failed to ensure that the Deepwater Horizon and its equipment were free from defects, properly maintained and/or in proper working order;

(i) failed to provide appropriate disaster prevention equipment; and,

(j) failed to have an appropriate emergency spill response plan or readily available spill response equipment.

4.62 Defendants' conduct, as described more fully hereinabove, is at the highest level of reprehensibility, warranting and necessitating the imposition of punitive damages at the highest level, because Defendants' conduct was motivated by financial gain; because it injured and endangered human and environmental health and safety; because it caused devastating damage and loss to the livelihoods, businesses and properties of Plaintiff; because it was not isolated or accidental, but part of a culture and ongoing pattern of conduct that consistently and repeatedly ignored risks to others in favor of financial advantage to Defendants; and because it has accordingly caused societal harm, moral

outrage and condemnation, and the need to punish Defendants and deter further repetition by Defendants or others.

4.63 Accordingly, Plaintiff is entitled to an award of punitive damages in an amount to be determined at trial.

## RESERVATION OF RIGHTS

4.64 The full extent of the costs expended and damages suffered by the State of Mississippi are not yet known. The investigation of other potential claims and parties continues, as does the assessment of environmental and economic damages and performance of removal activities. The State of Mississippi reserves the right to amend this complaint and/or file additional complaints under statutory law, common law, and/or general maritime law, to assert claims for penalties and damages, including, but not limited to, natural resources damages, and any other legal and equitable remedies authorized by law and regulation, including, but not limited to the OPA, against the present Defendants and/or against any additional parties.

## PRAYER FOR RELIEF

**WHEREFORE,** Plaintiff, the State of Mississippi, demands judgment against Defendants, jointly and severally, as follows:

(a) Economic and compensatory damages in amounts to be determined at trial;

(b) Punitive damages;

(c) Pre-judgment and post-judgment interest at the maximum rate allowable by law;

(d) Attorneys' fees and costs of litigation;

(e) Declaratory and injunctive relief;

(f) Such other and further relief available under all applicable state and federal laws and any relief the Court deems just and appropriate.

Respectfully submitted, this the 18th day of April, 2013.

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